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Practicalities of public health practice and evaluation:

The case of mental wellbeing in Coventry

By Rebecca Edythe Johnson

A thesis submitted in partial fulfilment of the requirements for the degree of

Doctor of Philosophy in the Health Sciences

University of Warwick, Warwick Medical School

September 2013

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Dedication

I would like to dedicate this thesis to my partner, Chris, for his fantastic support, ever-listening ear and refreshing perspective, and to my family for their optimism and belief in my ability throughout my course of study.

Acknowledgements

I am most grateful for my supervisors, Professor Aileen Clarke and Professor Sarah Stewart-Brown. Their unwavering integrity, support and encouragement throughout the project were given with sincerity, despite their many time commitments. They are both outstanding and admirable examples of women in science.

I would also like to acknowledge my long time mentor, J Clark Laundergan, whose encouragement, support, and friendship motivated me as a wayward undergraduate to pursue my questions about health, society, and life.

I acknowledge Murphy and Mia, who never failed to remind me of my work-life (and play) balance.

I would like to thank the Coventry City Council and NHS Public Health for funding this PhD work, as well as for their collaborative spirit in 'making it happen'. I thank the staff and participants of the Coventry Health Improvement Programme for their hard work, time, and generosity.

I would also like to thank the Director of Research Degrees, Research Degrees Coordinators, and colleagues and friends at Warwick Medical School for sharing their collective experience and knowledge and offering me unmitigated support during my degree course.

Declaration

I hereby declare that this thesis is all my own work except where I have otherwise stated and that this thesis has not been submitted for a degree at any other University.

Publications and presentations I have authored or contributed to can be found in Appendix 15.

Johnson, Rebecca Edythe

September, 2013

Abbreviations

Term	Synonyms & abbreviations	Applied Definition
Mental Health	Mental health, Psychological health	More than the absence of mental disorder, a state in which a person realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.[1]
Mental health problems	Mental disorder, mental illness, psychopathology	A psychological or behavioural pattern, associated with distress or disability, which is not considered part of typical development or culture[2]. Divided into psychotic disorders, affective disorders, anxiety disorders.
Common Mental health problems	Common mental/psychological disorders	Mental health problems that occur most frequently among the general population. Includes anxiety and depression.
Mental wellbeing	Positive mental health psychological wellbeing, emotional wellbeing (MWB)	Feeling good and functioning well. Incorporates both hedonic and eudaimonic aspects of wellbeing.
Eudaimonic wellbeing	Psychological wellbeing	The pursuit of meaning and self-realisation, the degree to which a person is fully-functioning[3].
Hedonic wellbeing	Subjective wellbeing (SWB), life satisfaction, happiness	The pursuit of pleasure attainment and pain avoidance. Positive affect, feelings.
Positive and Negative affect	Positive and negative feelings, moods.	The positive or negative experience of feeling or emotion.
Well-being	Wellbeing, well being	A positive physical, mental and social state; one where individuals are able to cope with the stresses of life.
Evidence based Public Health	EBPH	A public health endeavour in which there is an informed, explicit and judicious use of evidence that has been derived from any of a variety of science and social science research and evaluation methods[4].
Warwick-Edinburgh Mental Well-being Scale	WEMWBS	A 14 item positively worded scale for use in measuring eudaimonic and hedonic aspects of mental wellbeing. There is also a 7 item version (SWEMWBS).
The Coventry Health Improvement Programme	CHIP	A programme of nine health and wellbeing projects aiming to improve health outcomes for residents of Coventry while reducing health inequalities.
Coventry Household Survey	CHS	Annual representative survey of Coventry residents of their views on community, lifestyle and health.
The Coventry Partnership	the Partnership	Partnership between Coventry City Council and Coventry Primary Care Trust
Alcohol Treatment Requirement	ATR	CHIP Alcohol intervention
Structured Day Care	SDC	CHIP Alcohol intervention
Wellbeing Mentors	WBM	CHIP Healthy Schools intervention
One Body One Life	OBOL	CHIP Healthy Weight, Physical Activity intervention
Fit as a Fiddle	FAAF	CHIP Healthy Weight, Physical Activity intervention

[1] World Health Organisation, Herman et. al. (2005)
[2] American Psychiatric Association (DSM-IV TR, 2000)
[3] Ryff, 1989
[4] Rychetnik et. al. 2004, p538.

Abstract

There are gaps in the UK knowledge base for understanding the implementation and evaluation of public health interventions which aim to improve the mental health and wellbeing of participants. In this thesis I examine the measurement of mental wellbeing and the implementation of health improvement interventions in a community setting and investigate the practicalities of their evaluation using a measure of mental wellbeing -- WEMWBS.

Methods: Using a mixed methods approach I collected and analysed i) three cross sectional surveys of Coventry residents, ii) quasi-experimental before and after outcome evaluations of three CHIP projects, and iii) undertook semi-structured interviews with CHIP stakeholders. Data were integrated using a matrix technique.

Results: A total of 8188 individuals (~40% response rate) completed valid survey questionnaires in 2010-2012, while 590 individuals (~88% response rate) completed valid before-after mental wellbeing outcome evaluations in 2011 and 2012 from three CHIP projects. Fifteen one-on-one interviews were completed. I found that health and lifestyle variables 'sleep quality' 'physical activity' and 'fruit and vegetable consumption' showed the strongest and most consistent patterns of association with levels of mental wellbeing measured using WEMWBS. CHIP projects demonstrated associations between the intervention and increases in mental wellbeing, some of which were both statistically significant and clinically meaningful. Some were sustained at three months.

Interview findings showed that the difference between the plans and the observed implementation practices resulted in some of the projects struggling to cope with the evolving and changing needs of the programme, for example moving from outputs to outcomes, introducing mental wellbeing and changing concepts of health, and the work required to achieve partnership with the local authority). The effect on programme level outcomes and outcome measurement of these struggles was a reduction in the number and quality of valid evaluation returns from some of the projects in the programme and reduced staff capacity to deliver project objectives. The introduction of mental wellbeing as an outcome measure created a momentum of change for understanding complex health interventions and outcomes among stakeholders; it assisted those delivering the CHIP programme to understand the underlying health improvement rationale for their programme better.

Through integrating quantitative datasets I provided a benchmark from which to make comparisons between population estimates of WEMWBS and observed evaluation findings. Integrating quantitative evaluation process challenges and qualitative insights from stakeholder interviews allowed for complex issues to be 'untangled'. Interrelated mechanisms affected facilitators and barriers of programme planning, implementation, evaluation and sustainability. Integrating my quantitative and qualitative findings highlighted some clear health benefits from the projects but also highlighted a lack of congruence between the documented linear, unidirectional and unrealistic operational planning which I found in CHIP at a programme level, compared to practical implementation on the ground, which was nonlinear, complex and dynamic.

Conclusion: Iterative, transitional stages of programme development could benefit implementation processes and potentially health outcomes, including mental wellbeing, in future public health practice. Further research in this area should explore the extent to which complex, collective, and adaptive operational planning can result in more successful public health improvement programmes.

CHAPTER 1: INTRODUCTION

1.0 INTRODUCTION

In this chapter, I will present the main issues underpinning the rationale for this study. I will also describe the structure of my thesis.

1.1 INTRODUCTION

"Greater emphasis on psycho-social wellbeing represents an important shift in focus which better recognises...the complex range of social, environmental, and economic factors that promote wellbeing. It requires more of a focus on people's subjective experience of their lives, which requires that councils think not just about what they do but also the way they do it."

- The Role of Local Government in Promoting Wellbeing, 2010

Mental wellbeing is one aspect of health which has long-standing philosophical foundations, stemming from Aristotle's concept of 'eudaimonia' (Nagle, 1972). Understanding mental wellbeing in the context of overall health has important public health implications for increasing and extending functioning, capacity, resilience and improving quality of life (Ryff, Singer, Love 2004). There is evidence which suggests that mental wellbeing is a good indicator of how people and populations are able to function, cope with hardships in life and thrive (Huppert & Baylis, 2004; Ryff et. al., 2004; Keyes, 2007; Ryan, Huta, & Deci, 2008; Frederickson, 2001).

In public health, interventions aiming to improve mental wellbeing have, until recently, remained relatively overshadowed by mental illness treatment and prevention and this is not without reason. Mental health problems in the UK had an estimated health and economic cost of £77.4 Billion in 2003 ('Healthy Lives, Healthy People' DOH, 2010) and are a key priority for public health in England ('No health without mental health, DOH, 2011). There is a growing recognition that positive

mental health is influenced by social, cultural, economic, psychological and environmental factors but that opportunities for improving mental health and wellbeing should be "...based on strengthening self-esteem, confidence and responsibility… on promoting healthier behaviours… and adapting the environment to make healthy choices easier." (DOH, 2010, p29, 2.31). These documents identify how addressing mental health problems and improving mental wellbeing have equally important roles to play in public health improvement strategies at national and local levels.

Psychometric tools have recently been developed, designed exclusively to measure positive mental wellbeing, as opposed to the absence of mental illness. These measures include the WHO-5 Wellbeing Index (Bech, 1998), the Mental Health Continuum (MHC) (Keyes, 2002) and the Warwick Edinburgh Mental Well-being Scale (WEMWBS) (Tennant et. al., 2007).

Despite the existence of measures of mental wellbeing and a clear need for their use in public health, there is a paucity of research to guide the planning, implementation and evaluation of interventions which aim to improve health and mental wellbeing in real-world contexts (Barry, 2009; Taylor et. al., 2007).

Existing approaches to public health may not be sufficient to address complex concepts such as mental wellbeing. This may be due to an historical epidemiological, medical model approach, which has given undue focus to physical health and to the prevention of defined diseases as opposed to a balance of studies addressing both the physical and mental health and wellbeing as an outcome of public health interventions (Green, Glasgow, Victora et. al., 2004).

Some would argue that the evidence based medicine (EBM) approach can neglect aspects of public health which are critical to the understanding and conceptualisation of health and the services developed in order to maintain and

improve it (Greenhalgh, 2012). Distinguishing between a medical model approach and a social determinants-based preventative model approach in public health is important. EBM approaches place internal validity, explicit criteria to appraise evidence, randomisation and control, (i.e. Randomised Controlled Trials, (RCTs)) systematic reviewing and meta-analysis, as paramount in the hierarchy of evidence and can often make assumptions about generalizability of findings in different contexts. Public health interventions benefit from this type of evidence, but also require wider ranging evidence that examines intervention characteristics, implementation, target setting, and populations, all of which must be understood within the context of a social, economic and political zeitgeist as the work of Baum, 1995; Rychetnik et. al., 2002; Glasgow & Emmons, 2007;Green, Ottoson, Garcia, Hiatt, 2009; Brownson, Fielding, Maylahn, 2009; Greenhalgh 2012; and Rychetnik et. al., 2012, demonstrate.

There is therefore a need to understand and measure mental wellbeing in the context of public health interventions and there is a need to examine the effectiveness and implementation of those interventions using methods that reflect the complexity and nature of real-world public health.

1.2 Overview of the thesis structure

There are three phases of research in this thesis: Phase I) Quantitative; Phase II) Qualitative and Phase III) the integration of quantitative and qualitative findings. This thesis includes nine chapters. In chapter two I discuss the background of my study. In the first section I describe the setting - Coventry, England. In the second section I present the health strategy for Coventry and the Coventry Health Improvement Programme (CHIP). In the third section I define and describe evidence based public health in practice, following on to the fourth section which focuses on public health improvement interventions in particular. Finally in the fifth section I introduce the concept of mental wellbeing.

In chapter three I present my review of the literature on the topics which together make up the core elements of my thesis. First I address health improvement concepts, principles of evaluation, and evidence based public health; second I review mental wellbeing concepts in the 21st century and the use of WEMWBS as an outcome measure for public health improvement interventions.

In chapter four I present my methodology which describes my rationale for my study setting, research design and the particular methods chosen for the present study.

Chapters five and six make up the quantitative phase of my research (phase I). I describe the methods, results and summary of findings from the three cross-sectional surveys (chapter 5). In chapter six I describe the supporting evidence of public health improvement interventions addressed in this study- alcohol treatment, mental health and wellbeing promotion in schools, and interventions to improve physical activity among adults and older people. I then describe the methods, results and findings from five quasi-experimental before and after evaluations I conducted (chapter 6).

Chapter seven describes the qualitative phase of my research (phase II) including the methods of collection and analysis, the results and the summary of my findings. Chapter eight addresses the final phase of my research (phase III) where I integrate findings from phases I and II using a mixed methods matrix adapted from O'Cathain, Murphy, and Nicholl (2010).

In chapter nine (my discussion chapter) I summarise and discuss the findings of my thesis from each phase of research, the strengths and limitations of my methods, and I offer interpretations of the practicalities and pitfalls of public health evaluation and make recommendations for policy, practice and research.

CHAPTER SUMMARY

In this chapter, I have introduced this thesis and the presented the main issues behind the study rationale. I have described my origin of interest and outlined the structure of my thesis. In the next chapter, I will describe my study area and present background information on the setting of Coventry, England in greater detail.

CHAPTER 2: BACKGROUND

2.0 BACKGROUND

In this section, I present my research setting by describing the population and health characteristics of Coventry, introduce the Coventry Health Improvement Programme (CHIP), and the concepts of evidence based public health, public health improvement interventions, and mental wellbeing.

2.1 SETTING: COVENTRY AND CHIP

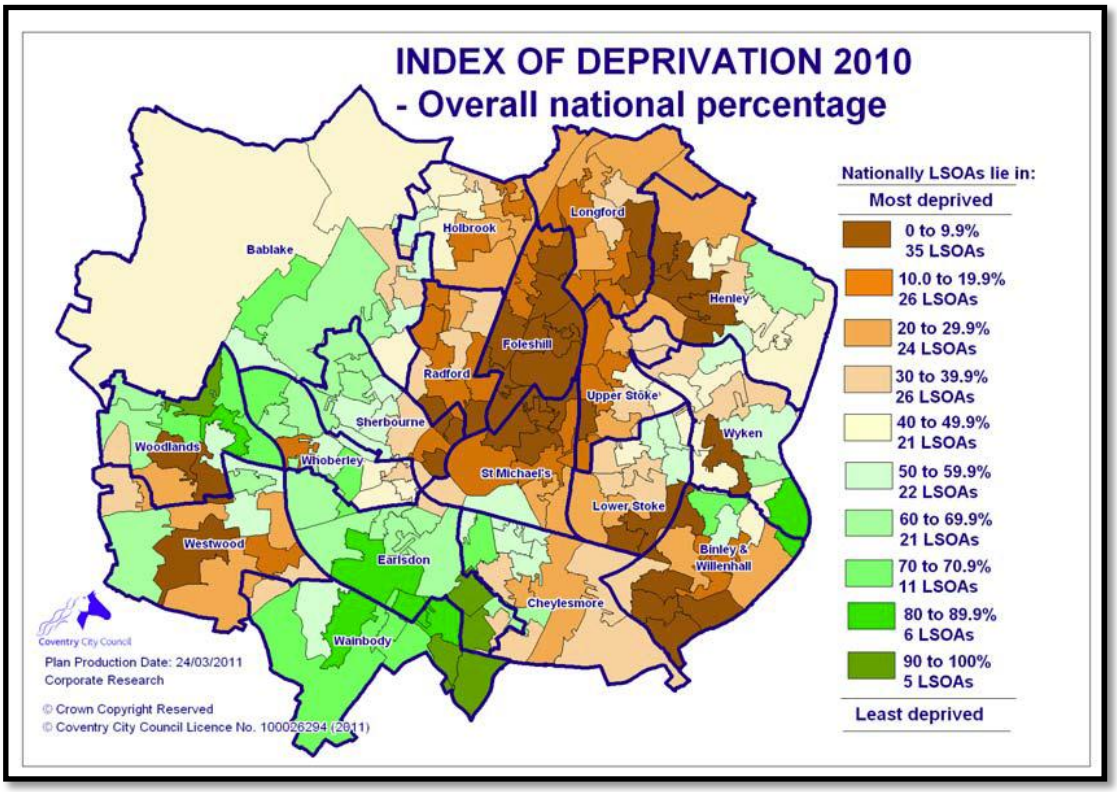
Coventry is a city with a population of 315,700 situated in the south of the West Midlands, approximately 25 miles southeast of Birmingham and 100 miles northwest of London.

Figure 1: Coventry, England

Source: www.world-guides.com

The population is young and diverse; one in ten people in Coventry is 20-24 years old. Coventry is relatively deprived compared to other parts of England, with almost a third of the total population (32%) living in neighbourhoods considered 'most deprived', compared to 20% in England overall (Coventry Health Profile 2010).

Figure 2: Index of Deprivation in Coventry



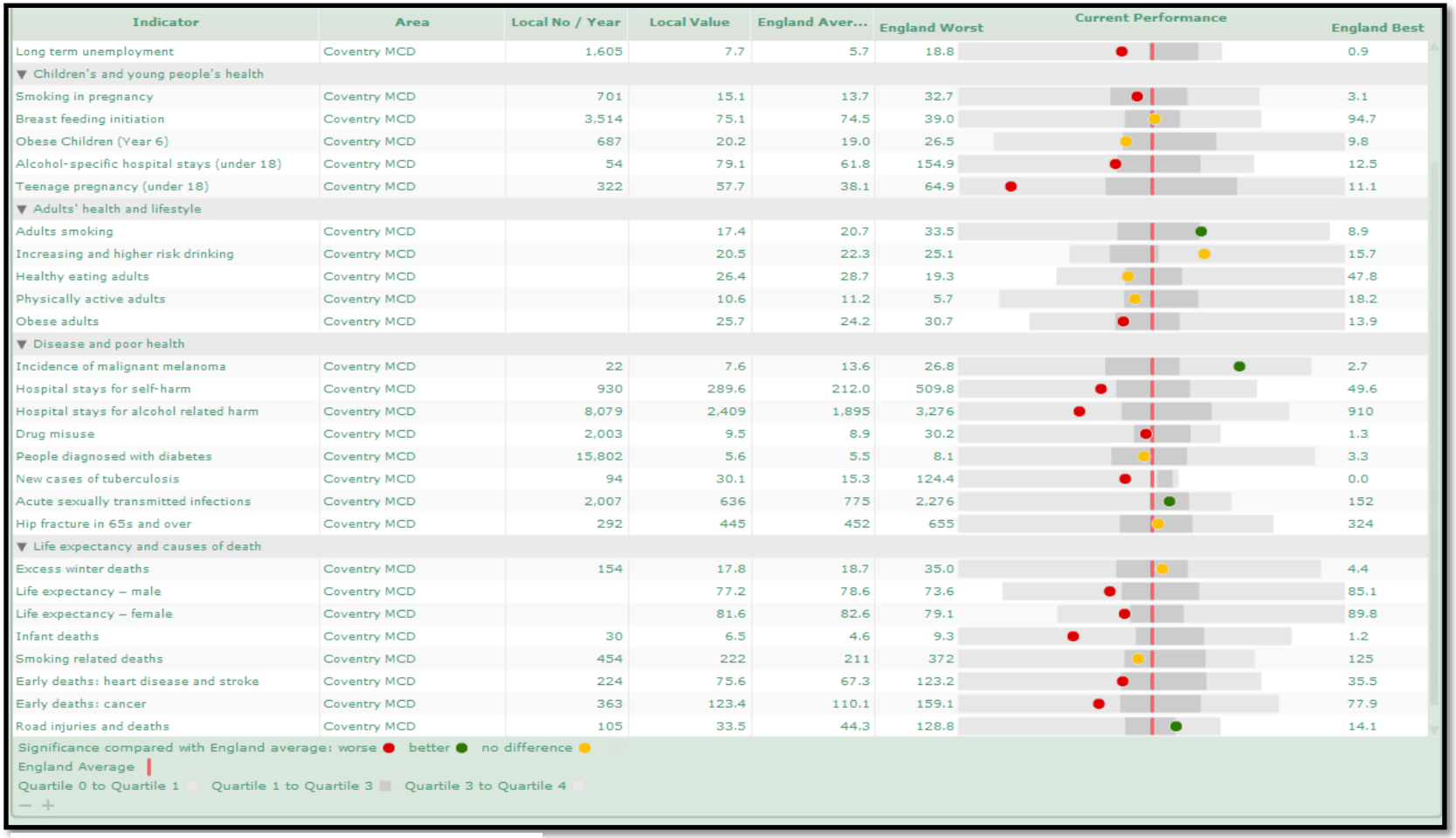
Source: Coventry City Council, 2013

Only 74% of the resident working age population were in employment in 2009/10 (State of the City 2010). It was estimated that Coventry's population consisted of 74% white British people. A quarter of Coventry residents were from Black and Minority Ethnic (BME) groups, including people with Indian origins who comprised 8% of the population, Pakistani 2% and Bangladeshi 1% (State of the City, 2010).

The Health Profiles for Coventry (2010, 2011) highlight aspects of the population's health compared to the England average. Figure 3 shows the Coventry Health Profile for a range of years, from 2008-2011 (depending on the indicator) source: Public Health England, 2013. The profile illustrates that the health of people who

live in Coventry is worse than that for England overall. Smoking and alcohol consumption are areas of concern, with higher rates of smoking during pregnancy, and alcohol-related hospital admissions than the average in England (Coventry Health Profile, 2011). The gap in life expectancy for men is the widest in the West Midlands, with 9 years difference between the least deprived and most deprived areas of Coventry (using the 2007 Index of Multiple Deprivation). Teenage pregnancy rates are some of the highest in England. Compared to the England average, there are more early deaths from cancer, heart disease and stroke, a significantly greater proportion of obese adults and obese children and significantly lower rates of physical activity among children (adult's physical activity being on a par with England's average).

Figure 3: Coventry Health Profile 2008-2011



Indicator	Area	Local No / Year	Local Value	England Aver...	England Worst	Current Performance	England Best
Long term unemployment	Coventry MCD	1,605	7.7	5.7	18.8		0.9
▼ Children's and young people's health							
Smoking in pregnancy	Coventry MCD	701	15.1	13.7	32.7		3.1
Breast feeding initiation	Coventry MCD	3,514	75.1	74.5	39.0		94.7
Obese Children (Year 6)	Coventry MCD	687	20.2	19.0	26.5		9.8
Alcohol-specific hospital stays (under 18)	Coventry MCD	54	79.1	61.8	154.9		12.5
Teenage pregnancy (under 18)	Coventry MCD	322	57.7	38.1	64.9		11.1
▼ Adults' health and lifestyle							
Adults smoking	Coventry MCD		17.4	20.7	33.5		8.9
Increasing and higher risk drinking	Coventry MCD		20.5	22.3	25.1		15.7
Healthy eating adults	Coventry MCD		26.4	28.7	19.3		47.8
Physically active adults	Coventry MCD		10.6	11.2	5.7		18.2
Obese adults	Coventry MCD		25.7	24.2	30.7		13.9
▼ Disease and poor health							
Incidence of malignant melanoma	Coventry MCD	22	7.6	13.6	26.8		2.7
Hospital stays for self-harm	Coventry MCD	930	289.6	212.0	509.8		49.6
Hospital stays for alcohol related harm	Coventry MCD	8,079	2,409	1,895	3,276		910
Drug misuse	Coventry MCD	2,003	9.5	8.9	30.2		1.3
People diagnosed with diabetes	Coventry MCD	15,802	5.6	5.5	8.1		3.3
New cases of tuberculosis	Coventry MCD	94	30.1	15.3	124.4		0.0
Acute sexually transmitted infections	Coventry MCD	2,007	636	775	2,276		152
Hip fracture in 65s and over	Coventry MCD	292	445	452	655		324
▼ Life expectancy and causes of death							
Excess winter deaths	Coventry MCD	154	17.8	18.7	35.0		4.4
Life expectancy – male	Coventry MCD		77.2	78.6	73.6		85.1
Life expectancy – female	Coventry MCD		81.6	82.6	79.1		89.8
Infant deaths	Coventry MCD	30	6.5	4.6	9.3		1.2
Smoking related deaths	Coventry MCD	454	222	211	372		125
Early deaths: heart disease and stroke	Coventry MCD	224	75.6	67.3	123.2		35.5
Early deaths: cancer	Coventry MCD	363	123.4	110.1	159.1		77.9
Road injuries and deaths	Coventry MCD	105	33.5	44.3	128.8		14.1

Significance compared with England average: worse better no difference
England Average
Quartile 0 to Quartile 1 Quartile 1 to Quartile 3 Quartile 3 to Quartile 4

Source: Public Health England, 2013

Despite these statistics, death rates from all causes have fallen in the past decade, and breastfeeding initiation rates are consistent with England's average. The West Midlands Public Health Observatory (WMPHO) identified areas of priority for improving the health of Coventry residents. These include decreasing rates of smoking, children's obesity, teenage pregnancy and reducing alcohol related admissions to hospital (Coventry Health Profile, 2010 & 2011). It is worth noting that the only mental health indicator on the profile reports the number of hospital stays for self-harm which is a measure of mental illness. This suggests that public health departments had no existing data to report mental health and mental wellbeing outcomes.

Building on the above health profile, the health strategy for Coventry for 2010 to 2014 outlined seven strategic issues and three strategic themes. The issues aimed to address smoking, weight management, sexual health, chronic obstructive pulmonary disease (COPD), diabetes, cardiovascular disease, and primary care quality. These issues are situated within three themes: address lifestyle risk management within the population, improve long term condition management in the community, and improve overall primary care (GP quality) (NHS Coventry Strategic Plan 2010). Within the theme to address lifestyle risk management was an engagement between NHS Coventry and the Local Authority to extend service provision through a health improvement programme. This programme and partnership for the city was the Coventry Health Improvement Programme (CHIP).

2.2 IMPROVING HEALTH AND REDUCING HEALTH INEQUALITIES IN COVENTRY

The Coventry Health Improvement Programme (CHIP) was a three year funded programme jointly managed and delivered by the Coventry city council and

Coventry NHS, running from 2009 to 2013 (with extended funding). It comprised nine projects which aimed to improve health outcomes for residents of Coventry, while reducing health inequalities. CHIP was consistent with the mission and strategy for delivering aspects of the health service in Coventry.

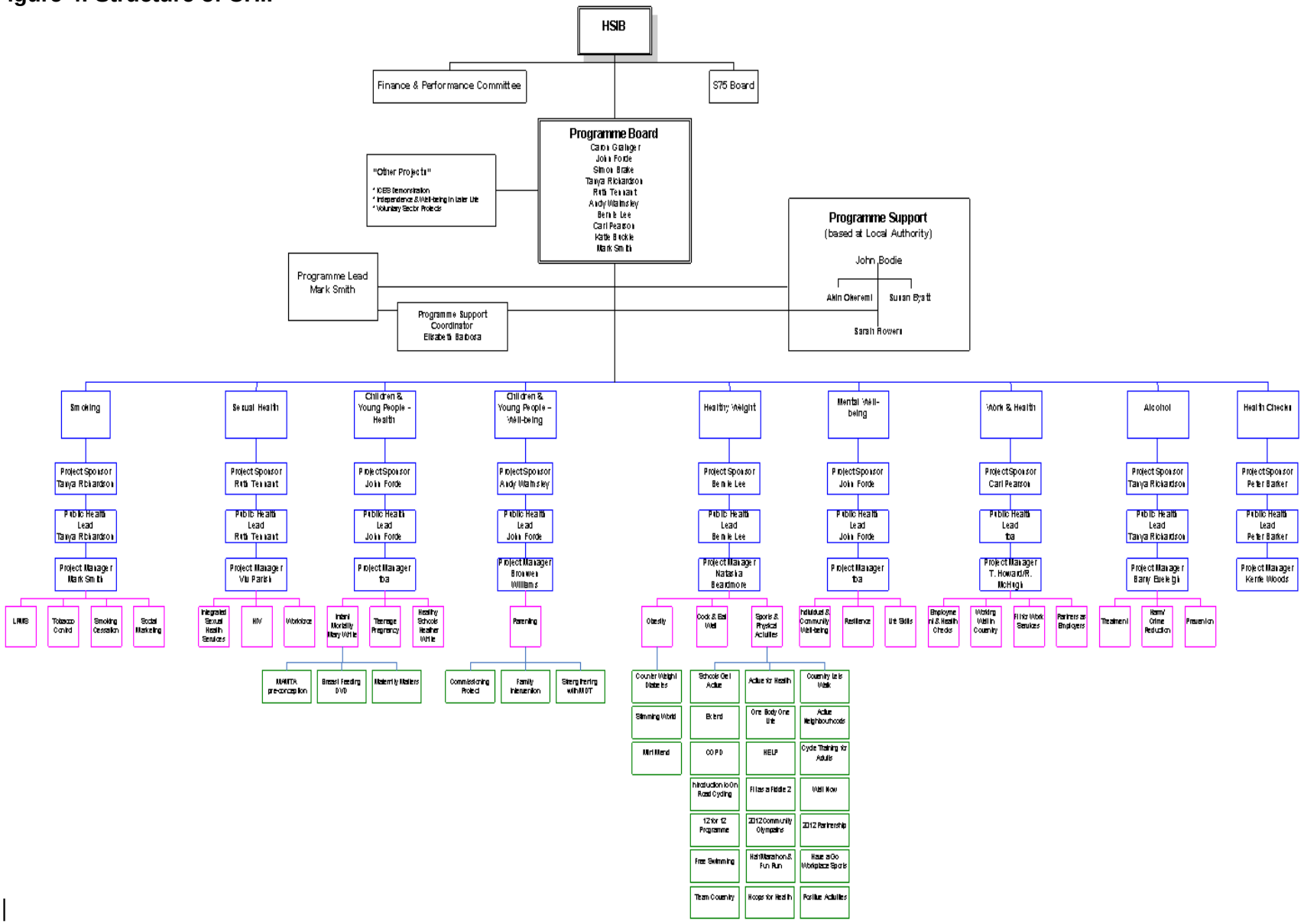
The funds became available as the result of a large 'underspend' identified by the then director of public health. In a short amount of time, the city council and NHS designed a programme of work to spend the surplus funds. The programme they designed was consistent with one of the four principal missions for NHS Coventry, 'Improving health and reducing health inequalities in Coventry', as well as meeting one of three strategic aims for Coventry set out for 2010/11-2013/14-Addressing lifestyle risk management issues (ALRMI) (Health Strategy for Coventry, 2010). In September 2009, the aim of CHIP was stated as the delivery of '...a major component of the Health Strategy for the City' which represented 'a delivery partnership between the lead Agencies NHS Coventry and Coventry City Council and a wide range of partners and stakeholders across the City' (Simon & Barbosa, 2009). Eight projects were originally laid out as CHIP (Simon & Barbosa, 2009) with the ninth added later (Health Checks). The projects were described as 'experimental or pilot projects as they are focussing on areas of intervention which are not well evidenced' and that as a consequence, it was '...therefore important that in addition to informing future investment decision making a robust evaluation approach is instituted to identify and embed learning for the City' (Simon & Barbosa, 2009). CHIP was still in development when the Health Strategy document for 2010/11 to 2013/14 was finalised on February 5th, 2010.

With mental wellbeing only just on the horizon as a public health issue in England, Coventry PCT and City Council serendipitously embedded mental wellbeing into the CHIP programme of work. It later transpired that the inclusion of mental wellbeing

into the CHIP agenda was facilitated by strong ties between PCT Public Health Department and public health academics at the University of Warwick.

A range of interventions and services was developed around the following subjects: alcohol, health of children and young people, well-being of children and young people, healthy weight, mental wellbeing, smoking, sexual health, work and health, and health checks. These subject areas became the 'CHIP projects'. Figure 4 below illustrates the organisational structure of CHIP and demonstrates the complexity and variation in the component projects which together created the programme of work. (Source: Coventry Partnership, 2009).

Figure 4: Structure of CHIP



2.3 PROJECT EXPECTATIONS & SELECTION

Each CHIP project required a Project Initiation Document (PID) to outline its aims and objectives (an example of a complete PID is provided in appendix 1). Each CHIP project comprised up to four 'workstreams', each workstream composed of specific 'activities' (interventions). Activities were a mix of one-off events (e.g. Coventry Marathon) and structured, longer term interventions (e.g.12 week physical activity classes). Of over 30 CHIP interventions, thirteen interventions were identified as potentially suitable for adding mental wellbeing outcome evaluations to the evaluation structure (Appendix 2 for table). Suitable interventions were identified using the following criteria:

- A local need was identified based on epidemiological information from Coventry
- The type of intervention could accommodate a before and after study design-participants made contact with intervention and staff at least three time points
- No potential participants had been exposed to the intervention before the outcome measurement would be collected.
- The staff collecting the outcome measure stated they had the capacity and willingness to collect mental wellbeing information in their evaluation structure
- The number of participants estimated to participate achieved minimum sample size requirements.

Five interventions met these criteria located in three projects. The projects were 'Alcohol' (2 interventions) 'Healthy Schools' (1intervention) and 'Healthy Weight' (2 interventions). The workstreams for these projects were:

- Alcohol
    - Prevention- Communication

    - Treatment
    - Harm/Crime reduction
- Healthy Schools
    - Coventry Healthy Schools Programme
    - Focus on Physical Activity and Sport
    - Overcoming Health Related Barriers to Learning (Wellbeing Mentors)
- Healthy Weight
    - Obesity
    - Cook & Eat Well
    - Physical Activity
    - Sport

For each project evaluated in this study, a 'programme action - logic model' was developed as part of the PID. The logic models provide an overview of each project setting and need, aims, and the expected inputs, outputs, and outcomes. The models are presented in figures 5-7 demonstrating the baseline planning design for CHIP projects. The logic models were completed by each project sponsor, public health lead, and project manager (Sources: Improving Health and Reducing Health Inequalities Project Initiation Documents (PIDs) for: Alcohol; Healthy Schools; Healthy Weight, NHS Coventry 2009).

Figure 5: Project Initiation Document Logic Model for Alcohol

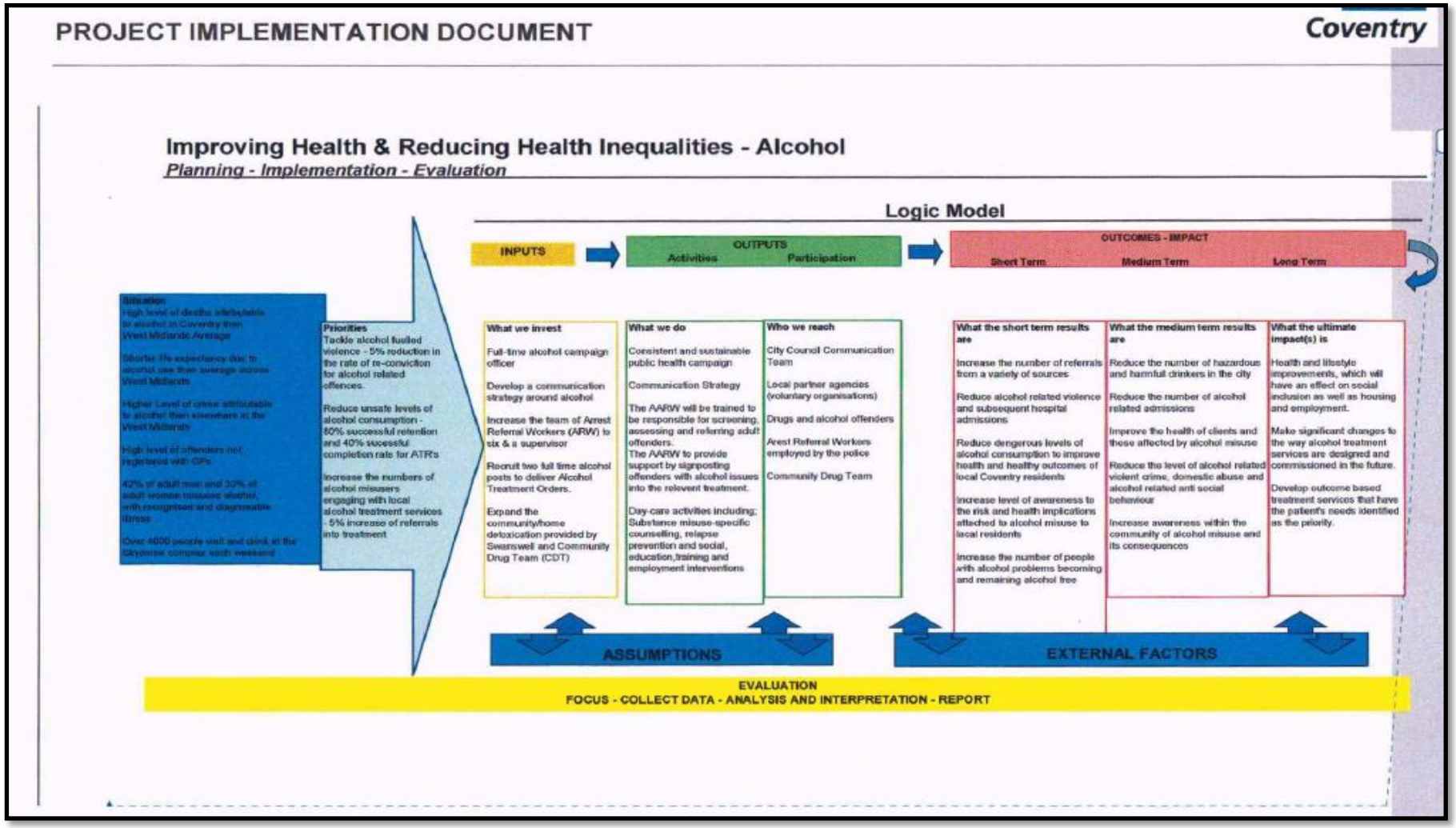


Figure 6: Project Initiation Document Logic Model for Healthy Schools

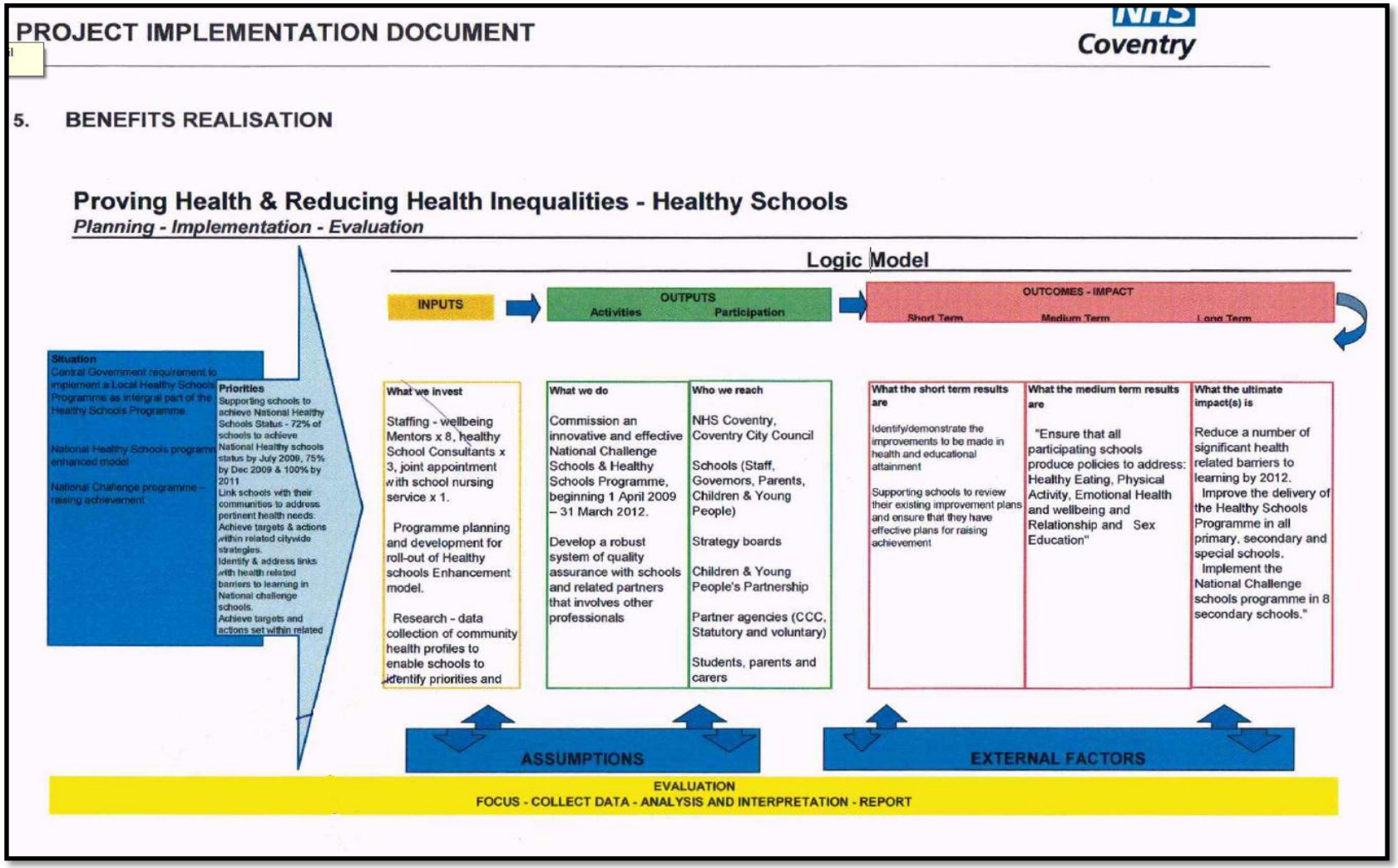
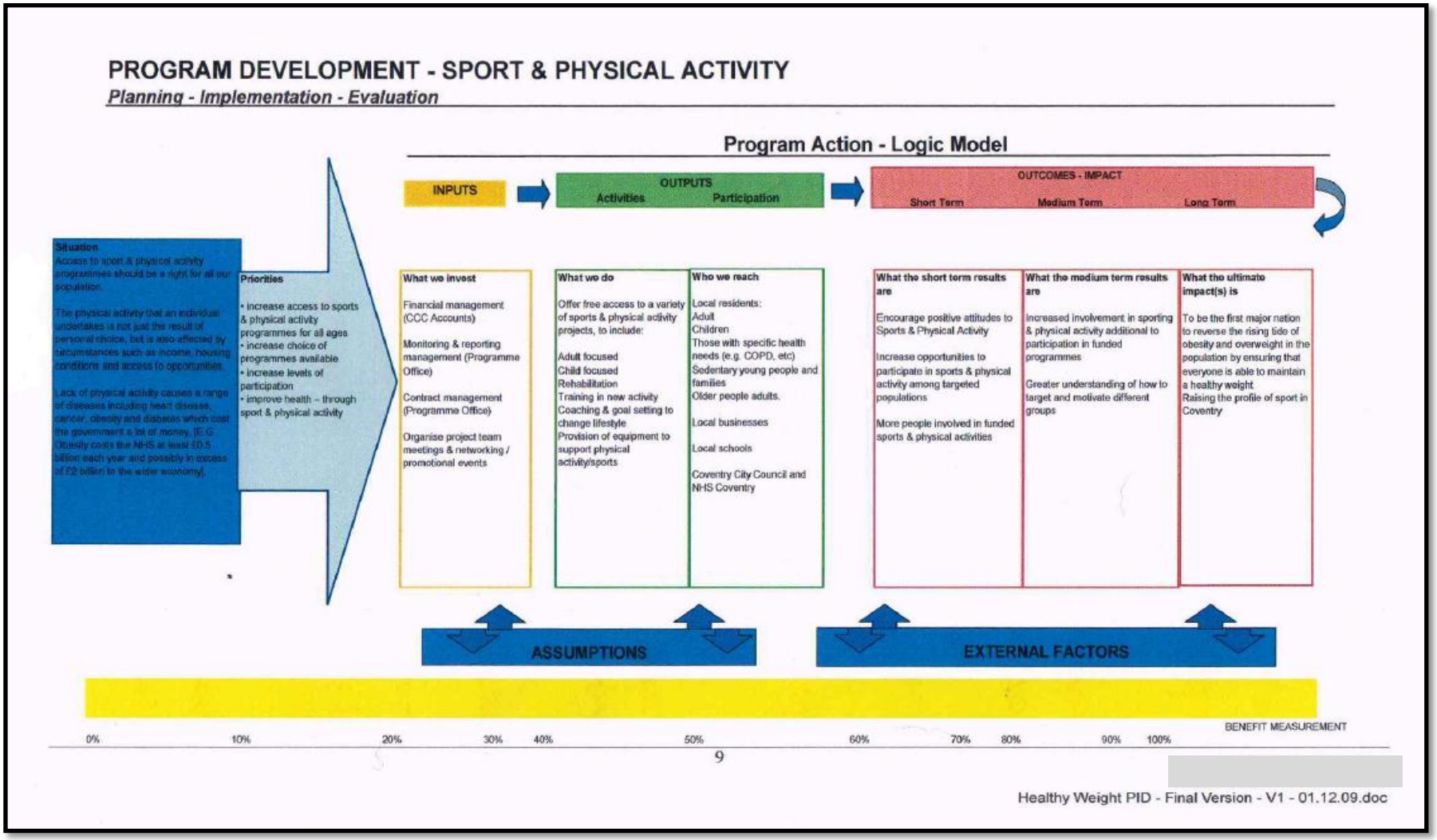


Figure 7: Project Initiation Document Logic Model for Physical Activity



In this section I have described the demographics and health characteristics of Coventry. I have also briefly described the Coventry Health Strategy and within that strategy, the Coventry Health Improvement Programme which is the focus of this thesis. In the next section I will address the relevance of policy and subject matter to further describe the context in which CHIP was to be implemented.

2.4 POLICY CONTEXT for MENTAL WELLBEING

In this section I describe relevant health and social policy developments which at the same time occurred as CHIP was being planned and designed and included the use of mental wellbeing as a national health outcome measure.

In 2007 Prince and colleagues suggested that *"there is a need to develop and evaluate psychosocial interventions that can be integrated into management of communicable and non-communicable diseases".* They made this statement in support of the claim that there is 'no health without mental health' (Prince et. al., 2007). Not long after, the Foresight Report on Mental Capital and Wellbeing was published (Beddington et. al., 2008). The Foresight report argued that if the UK as a society was to thrive in the coming decades, then the UK government would be required to develop mental capital (defined as a combination of cognitive and emotional resources, cognitive ability, capacity to learn, and ability to cope with stress) and facilitate better mental wellbeing (see definition below) for the population.

From a different perspective, 'the Stiglitz Report', a commission on the measurement of economic performance and social progress, outlined a call for change in the way nations measure their economic and societal well-being (Stiglitz et. al., 2009), echoing the call for long term change and ethos seen in the Foresight Report. The authors of the Stiglitz Report present the argument that markers of

economic and social well-being did not reflect the entire story behind the causes and consequences of national well-being. The authors emphasised that “well-being is important because there is an increasing gap between the information contained in aggregate GDP data and what counts for common people’s well-being” (p12). This report prompted action in the UK to undertake a review of indicators of national well-being, led by the Office for National Statistics, and a commitment from the Prime Minister to address the nation’s well-being, stating that "It's time we admitted that there's more to life than money and it's time we focused not just on GDP but on GWB – general wellbeing" (Stratton, 2010).

At the same time, the NHS white paper ‘Equity and Excellence: Liberating the NHS’ was published (2010). The white paper marked a sea-change for the NHS and Public Health in England by outlining changes to the way services were to be delivered in England. Changes most relevant to this study included creating a new ‘Public Health Service’ (PHE) to be located in local authorities (1.16), with a Director of Public Health appointed by the local authorities (point 1.15, 4.16); the creation of new ‘health and wellbeing boards’ to join up commissioning of NHS services, social care and health improvement (4.17); and the abolition of PCTs (1.16). This included the allocation of funds designated for population wide health improvement actions, perhaps reflecting the prescience of those working in public health in Coventry PCT and Coventry City Council. These changes closely reflect the work Coventry embarked on in the development of CHIP.

In the same year, the Public health white paper ‘Healthy People, Healthy Lives’ (DOH, 2010) further delineated what the changes might mean for the new public health. These changes expanded on the health improvement aims of ‘equity and excellence’ and reflected a commitment to improving population well-being (e.g. general well-being). This included recognising mental wellbeing as more than the absence of mental illness, stating that approaches addressing the ‘root causes of

people's circumstances and behaviour' should integrate mental and physical health. A milestone for 'Healthy People, Healthy Lives' was the inclusion of mental wellbeing as a national public health outcome measure, for the first time (Domain 2: health improvement, Self-reported wellbeing, 2.23v) (Improving outcomes and supporting transparency, 2011, 2013). The momentum for considering and measuring mental wellbeing made further gains with the publication of 'No Health without Mental Health' in 2011 (DOH, 2011). Objective 1 stated: "More people from all backgrounds will have better well-being and good mental health… to improve the mental wellbeing of individuals, families and the population in general."(DOH, 2011 p19, 3.8)

This growing support for understanding and measuring mental wellbeing is reflected in the changing international perspectives on general well-being and mental wellbeing, UK political agendas, and major changes to public health services in England.

In the next section I define and describe evidence based public health and discuss its relevance to the present study.

2.5 EVIDENCE BASED PUBLIC HEALTH IN PRACTICE

I will introduce here the concept of evidence based public health and its use as an approach to practical and effective evaluation in public health improvement interventions.

Evidence based public health (EBPH) can be defined as "A public health endeavour in which there is an informed, explicit, and judicious use of evidence that has been derived from any of a variety of science and social science research and evaluation methods" (Rychetnik et. al., 2004, p538). Evaluation of interventions in public health

is complex. Interventions often have a focus on outputs, e.g. demonstrating impact through reach (how many people accessed and completed the intervention), efficacy (the capacity of the intervention to produce a positive change), and effectiveness (how well the intervention performed in real life/naturalistic situations). However, this does not always translate well into public health evaluations in practice. A framework developed by Glasgow and colleagues in 1999 describes other areas relevant to interventions conducted in applied public health settings. The 'RE-AIM' framework outlines additional areas of enquiry that evidence based public health ought to incorporate into evaluations to robustly demonstrate impact on public health; it covers the following areas: Reach, Effectiveness, Adoption, Implementation, Maintenance, and is discussed in Chapter 3 (Glasgow Vogt, Boles, 1999). Brownson and Baker support this framework in their review of the concepts of EBPH. They highlight differences between EBPH and evidence based medicine and describe what they find to be the key characteristics of EBPH (Brownson and Baker, 2010):

- making decisions using best available evidence
- systematic use of data and information systems
- application of programme planning frameworks
- consultation of the community in assessment and decision making
- sound evaluation
- dissemination of the knowledge gained with stakeholders and decision-makers.

Examining differences between evidence based medicine and evidence based public health highlights the subtle but important issue of scientific perspective in context. Public health practice faces a constantly changing political, ecological and socioeconomic environment which influences evidence, decisions, interventions and

evaluations. The challenges that characterise a “mechanistic, determinism approach to science” are not the same challenges that face this complex inter-related system. This is critical to the practice and evaluation of public health (Glasgow and Chambers, 2012, p 48).

Others make it clear that these challenges should be addressed with consideration of traditional hierarchies of evidence and scientific assumptions imposed on public health research and practice (Petticrew & Roberts, 2003), and of the ecological system through which public health operates (Green, 2006). Rychetnik and colleagues suggest an expanded set of criteria to evaluate public health evidence (Rychetnik et. al., 2002). In this thesis I aim to take account of these different conceptual elements for implementing and evaluating public health improvement interventions, using the evaluation of mental wellbeing outcomes in the Coventry Health Improvement Programme as an example.

2.6 PUBLIC HEALTH IMPROVEMENT INTERVENTIONS

In this section I discuss the importance of evaluation of public health improvement interventions and highlight the lack of research and identified literature for evaluating mental wellbeing.

Public health interventions are complex (Craig et. al., 2008). They involve multiple levels of management, are hosted in a variety of places and can be delivered by different staff members over time. People can choose if and when to attend public health improvement interventions and can drop out at any time without giving a reason. Interventions can have multiple positive or negative outcomes, only some of which may be formally collected by those evaluating an intervention (Øvretveit, 1998, Pawson & Tilley, 1997). There is much variation in determining what constitutes success or failure, given many possible short and long term process and

outcome measures to select and emphasise (Linnan & Steckler, 2002). These differing definitions and perspectives can therefore be built into evaluations either implicitly or explicitly, and may indicate which 'stakeholder' perspective underpins the evaluation (stakeholders can include general services users, participants, service providers, managers, funders, and researchers). Each role is likely to emphasise the value of some elements over others. Comprehensive health intervention evaluation can foster opportunities for greater understanding and future development by including these values and making them explicit (Øvretveit, 1998).

The recognition of mental health and wellbeing as a public health priority suggests the need to evaluate interventions using mental wellbeing indicators. While there is a growing body of literature on promoting mental wellbeing, there is little published literature available to identify possible mechanisms of change (the ability of interventions to improve mental wellbeing) and where mental wellbeing is not the primary outcome, the interaction between primary and secondary outcomes in health improvement. In 2007, the UK National Institute for Health and Clinical Excellence (NICE) conducted a review of evidence on public health interventions to promote positive mental health and prevent mental health disorders among adults (Taylor et. al., 2007). They included studies on both the general population and groups at risk of mental health problems, measuring a range of outcomes from death to psychological wellbeing.

Taylor and colleagues selected 20 systematic reviews and examined evidence of effectiveness, settings, population groups, life events, relevant topics and cost effectiveness (Taylor et. al., 2007). The majority of evidence was associated with primary and secondary prevention of mental disorder (Bower, et. al., 2003), coping skills for dealing with stressors at work (van der Klink et. al., 2001) or caring for others with a mental illness or a disability (Cuijpers 1999; Tilford et. al., 1997). Evidence of effective positive mental health interventions was found for three types

of behavioural parenting programmes (Barlow et. al., 2003), volunteering among older people (Wheeler et. al., 1998) and physical activity participation (Fox, 2000, Biddle, 2000). However there were few reviews on the promotion of positive mental health among adults in the general population and no reviews evidence of cost effectiveness of positive mental health interventions; the authors suggested that this was due to lack of primary research on positive mental health interventions in the field (Taylor et. al., 2007).

In the next section, I introduce the concept of mental wellbeing.

2.7 MENTAL WELLBEING

There are differences between mental wellbeing, mental health, and mental illness. Research and practice surrounding mental health has historically focused on the identification and treatment of mental illness. Not long after the publication of The Diagnostic and Statistical Manual for Mental Disorders (DSM) in 1952, concerns were raised suggesting that not all psychiatric professionals agreed on the view of mental illness represented in the DSM. In particular, Szasz (1960) and Rosenhan (1973) opposed the assumption that interpersonal interactions were inherently harmonious and therefore the 'norm' to be deviated from. They disagreed that there were clear, judgement-free lines to be drawn between the 'sane and the insane'. Szasz suggested that 'problems of living' exist in wider context of what is "obvious… from mother to child, through husband and wife, to nation and nation [situations which] are fraught with stress, strain, and disharmony…" He suggests that "what may be obvious may also be poorly understood" (Szasz, 1960, p117). Since then the DSM has undergone several revisions providing a wider view of mental illness. In 2000, the DSM defined a mental disorder as "a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual is associated with present distress (e.g., a painful symptom) or disability (i.e., impairment in one or

more important areas of functioning) or with a significantly increased risk of suffering death, pain, disability, or an important loss of freedom" (DSM IV-TR). Since the writings of Szasz many have recommended bridging the gap between mental illness and mental wellbeing by recommending the continued pursuit of greater understanding of mental health, that it can be socially and culturally value-laden and that action should be taken to promote it.

Today the World Health Organization defines mental health as "A state of wellbeing in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community". And states that "mental health is more than the absence of mental disorder" (WHO, 2005). These definitions reflect the transition from mental health equating mainly to mental illness to a definition reflecting positive mental health and mental wellbeing as synonymous (Seligman, Parks & Steen, 2004).

For the purpose of this study, the relationship between mental wellbeing, mental health and mental illness is based on the premise that the concepts are different constructs. Although the two concepts are related they are not the same (Appendix 3). Individuals might possess a diagnosed mental health problem yet have good levels of mental wellbeing (Bergsma et. al., 2011); or they may experience poor mental wellbeing but not necessarily exhibit symptoms leading to the diagnosis of a mental health problem (Keyes, 2002).

CHAPTER SUMMARY

In this chapter I have introduced the research setting in Coventry, including CHIP and the relevance of CHIP to public health policy. I have provided background on evidence based public health, health improvement interventions and introduced the concept of mental wellbeing.

In the next chapter, I review the literature on these topics in more detail.

CHAPTER 3: LITERATURE REVIEW

3.0 LITERATURE REVIEW

In this chapter I address my first research objective, to examine the literature on the implementation and evaluation of public health improvement interventions in community settings and on the Warwick-Edinburgh Mental Well-being[5] Scale (WEMWBS) as an outcome measure for evaluating mental wellbeing in public health improvement interventions. I will also state my research questions and objectives of the study. I divide this chapter into two sections of literature review.

First, I conduct a conceptual review of literature on the key concepts related to public health improvement, including aspects of intervention implementation and evaluation relevant to the present study. Second, I provide an overview of the concepts of mental wellbeing, its correlates, and the measurement of mental wellbeing as a public health intervention outcome using WEMWBS.

[5] When the term 'wellbeing' is hyphenated, it refers to general well-being. When wellbeing is not hyphenated, it refers to mental wellbeing, however the official name of WEMWBS includes the hyphenated term.

SECTION 1: CONCEPTS OF PUBLIC HEALTH IMPROVEMENT

In this section, I review the literature on key concepts, approaches and theories relevant to public health intervention implementation and evaluation. I use the terms 'health promotion' and 'health improvement' interchangeably depending on the context referenced authors use.

3.1 METHOD

I used a conceptual review method. A conceptual review can be defined as a review that aims to synthesise areas of conceptual knowledge that increase understanding of the conceptual issues (Petticrew and Roberts, 2008). I examine key literature from seminal publications such as the Ottawa Charter for Health Promotion (1986) to publications that consider health improvement intervention evaluation, complex aspects of public health and evidence based public health (Green, 2001; Rychetnik et. al., 2012; Brownson et. al., 2009).

3.2 DEFINING HEALTH PROMOTION AND IMPROVEMENT

In 1980, Green defined health promotion as "any combination of health education and related organisational, political and economic interventions designed to facilitate behavioural and environmental changes that will improve health" (Green, 1980, from Rootman 2001). This definition reflects health promotion as an endeavour that involves multiple disciplines, complex systems and aims for purposeful active changes to improve the health of people and their environment. The principles that underpin this definition (and others like it) were made explicit in Canada in 1986, where the Ottawa Charter was developed (WHO, 1986). In it, the core tenets of health promotion are laid out and are still relevant to public health practice today. The charter describes health as a 'resource for everyday life, not the objective of living'. The charter also states that the promotion of health extends beyond healthy

lifestyles to well-being, and outlines prerequisites for health as well as principles of health promotion action.

The charter states that health requires peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity. Taking health promotion action means: building healthy public policy, creating supportive environments, strengthening community action, developing personal skills, and the reorientation of health services. The charter outlines the role of health services as one that

> *"... must move increasingly in a health promotion direction, beyond its responsibility for providing clinical and curative services...[It] should support the needs of individuals and communities for a healthier life, and open channels between the health sector and broader social, political and economic components"*

taking the stance that multi-component approaches are worthwhile for improving the health of populations. The charter ends by stating that strategies for health promotion are in line with the moral and social values form the basis of the Charter and can achieve improved health 'for all'.

While the charter addresses relevant health issues, approaches, and environments, it lacks a health promotion theory. Another perspective on the Ottawa Charter (and health promotion more generally), is presented by Antonovsky, suggesting that in the absence of a theoretical foundation, health promotion does not compete well with the established 'pathogenic approaches' of disease prevention and disease treatment model (Antonovsky, 1996). He problematises the pathogenic approach by questioning the assumption of a disease dichotomy- that humans are either diseased in some capacity, or they are not (1996). Antonovsky theorises that the presumption that human systems are inherently free of disease is not the only way

to approach the subject; that it is just as likely that the contrary is true and the human system is inherently flawed. Following this logic, he states that if the human system were inherently flawed, then the pursuit of health (salutogenisis) would provide a theoretical base for health-promoting activities. He further illustrates this concept of health as one that is not dichotomous, but rather on a continuum that ranges from diseased to having optimal health (likening health metaphorically to a river, see Figure 8). By changing tack on general assumptions about the starting point of the human system, Antonovsky contributes a major component to the well-being debate. He confronts pathogenic approaches. For example, he suggests that the promotion of health should seek to identify positive, 'salutary' factors, rather than identifying and reducing risk factors, leaving that to other health service braches (prevention and treatment). Antonovsky's argument clarifies the rhetorical challenges of different health 'starting points' in the human system (pathogenic versus salutogenic); he provides a theoretical foundation for the longstanding notion that 'health is more than the absence of illness' (WHO, 1948) through his salutogenic model and in doing so supports the endeavours of understanding and promoting well-being. Figure 8 provides a useful illustration of Antonovsky's theory of health.

Figure 8: Health in the River of Life

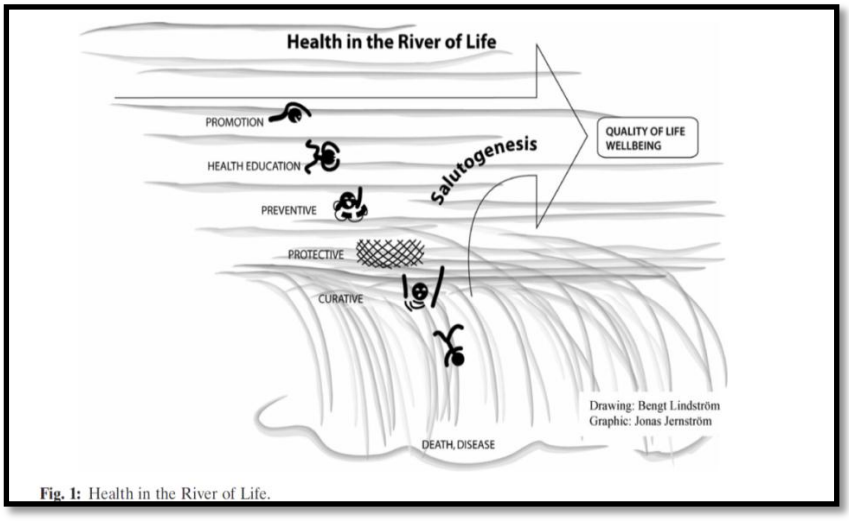


Fig. 1: Health in the River of Life.

Source: Eriksson and Lindstrom (1998)

3.2.1 Health improvement interventions

While Antonovsky provides a useful foundation from which to view health, his theory does not necessarily provide a structure or definition for developing interventions to improve health. Green's definition of health promotion conveys a sense of public health *activity* to facilitate improvements in health (1980). I therefore define a health improvement intervention as an action intended to facilitate positive changes to the health of individuals, populations or places. This builds on Antonovsky's salutogenic model of health.

Another definition of health promotion is that an intervention is simply something that aims to produce a change, and make a difference to people's lives (Øvretveit, 1998). Rychetnik, Frommer, Hawe and Shiell more specifically define a public health intervention as something 'intended to promote or protect health or prevent ill health in communities or populations' including both pathogenic and salutogenic perspectives (2002, p119). Interventions can be implemented in a variety of ways and intended for different places or people– they may intend to change individual behaviour (to increase fruit and vegetable consumption), or to teach a skill (to use the internet), or provide access to a healthy setting, which might increase the opportunity for healthy behaviour in an entire community (to build a pedestrian bridge over a busy road to create a safe pathway from a school to a nearby park).

While definitions and approaches to health improvement can differ somewhat, there is little disagreement in the field that these interventions are often complex (Craig and Petticrew, 2012; Riley & Hawe 2009; Linnen & Steckler 2002; Rootman et. al., 2001; Øvretveit, 1998; Antonovsky, 1996). Conceptually, complex phenomena differ from simple and complicated phenomena best exemplified in this figure from Glouberman and Zimmerman, see Figure 9 (2002, from Rogers, 2008).

Figure 9: Differences between simple, complicated and complex problems

Simple: *Following a recipe*	*Complicated:* *Sending a rocket to the moon*	*Complex:* *Raising a child*
The recipe is essential	Formulae are critical and necessary	Formulae have a limited application
Recipes are tested to assure easy replication	Sending one rocket to the moon increases assurance that the next will be OK	Raising one child provides experience but no assurance of success with the next
No particular expertise is required but cooking expertise increases success rate	High levels of expertise in a variety of fields are necessary for success	Expertise can contribute but is neither necessary nor sufficient to assure success
Recipes produce standardized products	Rockets are similar in critical ways	Every child is unique and must be understood as an individual
The best recipes give good results every time	There is a high degree of certainty of outcome	Uncertainty of outcome remains
Optimistic approach to problem-solving	Optimistic approach to problem-solving	Optimistic approach to problem-solving

Source: Glouberman and Zimmerman, 2002. Also Rogers, 2008.

A complex intervention can be described as an 'intervention that contains several interacting components' (Craig et. al., 2008, p7). Both Craig (2008) and Rogers (2008) illustrate that there are multiple dimensions to the complexity of interventions (and their evaluations). Craig suggests that it is the number and interactions between components, the number and difficulty of behaviours required by individuals delivering and receiving the intervention, the number and variability of outcomes, and the degree of flexibility or adaptation of the intervention, that makes it complex (Craig et. al., 2008). Rogers provides more structure delineating simple, complicated and complex aspects of interventions. For example, she suggests that one aspect of an intervention could be non-linearity and disproportionate outcomes, and that the challenges for evaluating such an aspect would be that 'a small initial effect may lead to a large ultimate effect through a reinforcing loop or a critical tipping point' (p32). Sheill, Hawe and Rickles and Gold echo these characteristics

and add ‘a tendency to be self-organising’, ‘may have a sensitivity to initial conditions’ and ‘may have emergent properties’ (Sheill, Hawe, Gold, 2008; Rickles, Sheill, Hawe, 2007).

The challenge then, lies in the consideration of the impact complexity can have on the design and evaluation of interventions. This is often a problem with the dominant simple and linear logic model. Craig, Rogers, and Green offer alternatives to the traditional model by characterising *processes*, instead of particular ‘best practices’ (Green most explicitly from his 2001 article) Craig emphasises the main stages of the process as:

1. Feasibility and piloting
2. Evaluation
3. Implementation
4. Development

While Rogers highlights a ‘developmental’ evaluation process which facilitates greater consideration for complexity in interventions (Patton 1994, from Rogers 2008), particularly when

- dealing with a ‘wicked problem’,
- partnerships and network governance are involved,
- the focus is on building community capacity.

She further suggests that if an emergent-type intervention is identified, methods used to understand and evaluate it might construct a series of logic models in order to reflect changes in understanding as the programme develops (2008).

Greens emphasises the role of context (as do Hawe, Shiell, and Riley, 2009) in intervention and evaluation processes (2001) echoing notions of Alfred Scutz’s ‘system of relevances’, and the theory of social phenomenology (for more on Alfred

Schutz, see Appendix 4). Green develops the idea that homogeneity does not map well onto the social and behavioural aspects of human services (that they are heterogeneous) and that 'health promotion research can promise to produce a generalizable *process for planning*, not a generalizable *plan* (p173, Author's emphasis). Green goes on to suggest other ideas which reflect a consideration of context in intervention development and evaluation that:

- emphasise control by practitioner, patient, or community
- emphasise local evaluation and self-monitoring
- increase study of place, setting and culture

These ideas and considerations of processes reflect a theme that there is no 'magic bullet' or one size fits all intervention or evaluation model when dealing with complex public health improvement activities.

The suggestions that health improvement interventions are often complex, that their complexities occur in multiple dimensions, and that the dimensions can interact, all contribute to an implied understanding that designing an intervention without treating implementation and evaluation as integral components of a complex system could result in problematic implementation. Rogers eloquently suggests that complex interventions 'present the greatest challenge for evaluation and for the utilisation of evaluation because the path to success is so variable and it cannot be articulated in advance' (2008, p31).

In the next section, I discuss key issues associated with evaluating public health improvement issues.

3.2.2 Evaluating public health improvement interventions

Øvretveit describes evaluation as a process that makes "a comparative assessment of the value of the evaluated or intervention, using systematically collected and

analysed data, in order to decide how to act" (p9). He talks about health evaluation in relative terms- deconstructing the term to identify the root issue (value), and the attribution of value to an intervention, event or state. He discusses the need to recognise multiple values depending on the perspective, for example noting that the values of a patient might differ from the values of the director of medical services. He points out that evaluations aim to

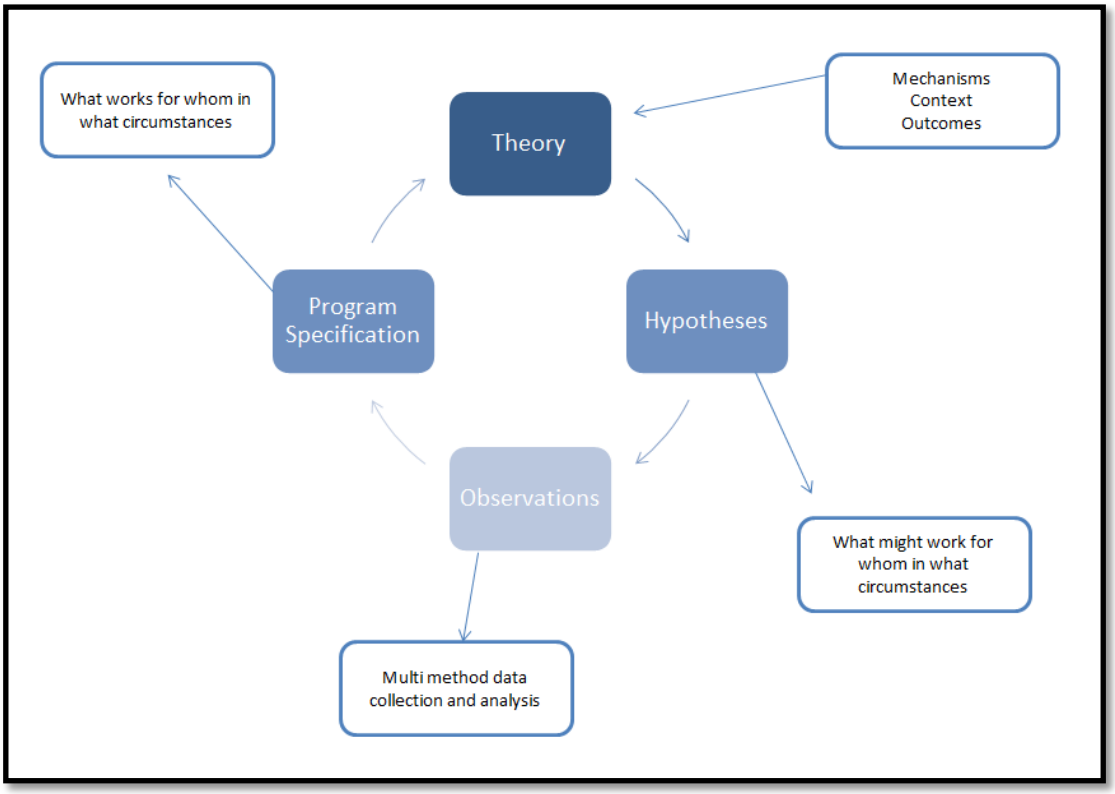
- describe the intended and actual intervention,
- describe or measure the consequences,
- provide information for judging the value of the intervention and
- explain why what was described did occur (Øvretveit, 1998).

The prevailing perspective that Øvretveit conveys therefore seems to be one of open enquiry, exploration of aims and objectives of stakeholders, and a relatively theory-free conceptualisation of evaluation.

Pawson and Tilley, on the other hand, rely heavily on theory generation and discuss evaluation in terms of its wider scientific objectives, suggesting a shift from historically objectivist, simplistic attempts at evaluation that resulted in a 'disappointing mixed bag of results' (1997, pxiii). Their solution is a realist perspective on evaluation. They suggest that despite the promises of evaluation, the question of import is 'what does the program do to change behaviours and why is...every situation not conducive to that particular process?' (p11). They break it down into components and illustrate their theory on mechanisms of change. They require the recognition of context by describing their 'context/ mechanism/ outcome' structure (CMO). Considering evaluation in the way Pawson and Tilley do therefore enables evaluators to develop meaning around different perspectives, and works to account for contextual factors as mechanisms for change in health and social interventions (consistent with some of the implementation issues raised by Hawes,

Glasgow, Green and others). Pawson and Tilley encourage evaluators to move away from the traditional experimental design, (while remaining firmly within the 'wheel of science') to promote theory-testing, the pragmatic selection of methods, and the development of specification, rather than the traditional goal of generalisation (Pawson & Tilley 1997). Below I illustrate their interpretation of the wheel of science:

Figure 10: Pawson & Tilley's realist 'wheel of science'



Source: Pawson & Tilley, 1997

Pawson and Tilley therefore encourage evaluators to examine 'what might work for whom in what circumstances' closely. This ties in with the idea of process evaluation in general. Process evaluation seeks to examine the processes through which an intervention was implemented (the 'how') and it differs from outcome evaluations that seek to identify what happened as a result of an intervention (the 'what'). A good example of examining context as a design and implementation issue comes from Pallan, Parry and Adab, who demonstrated that participant

perceptions, evaluator assumptions and culture all act as contexts which can influence decisions about what health improvement interventions are likely to be acceptable to the community in which they are implemented (2012). They showed that addressing assumptions about what health intervention participants want or need (by accessing community stakeholder knowledge) can help improve the design of interventions (Pallan, Parry, Adab, 2012).

Linnen and Steckler highlight that process evaluations are of benefit because they can help to explain why certain results were achieved, or which theoretical constructs are more effective or acceptable to participants, and can help to identify interactions or pathways between certain intervention components (2002). They also provide a good summary of process issues to consider during evaluation, drawing on literature from Perry and Colleagues (1997) who conducted a process evaluation and highlighted four key aspects.

- Participation
    - Did implementation staff attend training sessions offered to them?
- Dose
    - Were prescribed components of the programme implemented (and to what degree)?
- Fidelity
    - Were the prescribed intervention components implemented according to protocol?
- Compatibility
    - Did the programme fit the context of the setting as well as the needs, expectations, and values of the staff members and teachers?

Other process evaluation lists include aspects of interventions such as recruitment, maintenance (of participants), resources, reach and barriers to reach, and exposure

(actual reception of participants or staff of materials or training given to them among others (Baranowski and Stables, 2000, from Linnen and Steckler, 2002). These components are further developed in Glasgow's 1999 'RE-AIM' framework, to help evaluate the impact of public health improvement interventions (Glasgow, Vogt, Boles,1999). The framework addresses the following evaluation components in Table 1: Reach, Efficacy/Effectiveness, Adoption, Implementation, Maintenance.

Table 1: RE-AIM Framework

Dimension	**Aspects of evaluation**
Reach	Proportion of the target population that participated in the intervention
Efficacy/ Effectiveness	Success rate if implemented as in guidelines defined as positive outcomes minus negative outcomes
Adoption	Proportion of settings, practices and plans that will adopt the intervention
Implementation	Extent to which the intervention is implemented in the real world
Maintenance	Extent to which an intervention is sustained over time Funding is just one of many reasons why an intervention might not be sustained, but other more hidden reasons would include lack of staff morale in delivery and internal and external challenges to the intervention.

Table adapted from Glasgow, Vogt, Boles, 1999.

The RE-AIM framework was intended to aid more comprehensive, multi-component reflection on aspects of public health improvement interventions and to move away from expensive, efficacy focused evaluations (reflecting the arguments of Green, 1996, and Pawson & Tilley,1997, among others) (Glasgow, Vogt, Boles, 1999). It is simple and flexible enough to use retrospectively on an intervention which has already been conducted, or to prospectively plan evaluation of an intervention. A disadvantage of RE-AIM is that there is little description of complex system effects and the role they can play in the outcomes of an intervention (e.g. feedback loops). Nevertheless, it is a sound basis from which to further explore multiple components in public health intervention evaluations.

One such component worth further reflection is that of intervention implementation. Hawe and colleagues reflect, in their evaluation of a community intervention trial, that “the time, energy, quality and professional confidence of maternal health workers may have as much...to do with health outcomes to mothers in the trial, than say, whether or not the information kits were distributed properly and rated satisfactorily by mothers.” (Hawe, Shiell, Riley & Gold, 2004, p792). In the same paper, three issues were raised which concerned the implementation of interventions in communities. First, the authors questioned whether researchers are assessing enough outcomes in interventions, second, they questioned what the impact of the research itself could be on the intervention, and third they raised concerns over ethical issues identified during their investigation. Later work by Riley and colleagues delves deeper into how people implement complex interventions. This work typified narratives constructed during a complex community level health intervention, highlighting the personal investment of stakeholders in a professional process. This is relevant to the present study because it illustrates... “typology not of best practice necessarily, but of *real practice*, the positioning of people and ‘the stakes’ among them” (Riley & Hawe, 2009, p80, my emphasis). In these ways, the evaluation of processes and contexts is critical to understanding the all-around phenomenon of an ‘intervention’ shedding light on aspects such as project language, problematisation, symbolic meaning of aspects of the intervention, and the value of the intervention over existing ways of working (Hawe, Shiell, Riley, 2009). This work illustrates the nascent methods and ideas surrounding process evaluation in complex health improvement interventions.

In the next section I describe concepts of evidence for public health.

3.2.3 Evidence based public health

The principles behind evidence based public health (EBPH) encompass a range of approaches to gather particular types of evidence required to make good decisions for public health action. Brownson, Fielding and Maylhan frame three types of scientific evidence to illustrate the necessity of multiple types of valid evidence. Type 1 defines and describes the causes of diseases (note the lack of search for causes of well-being); type 2 defines and describes specific interventions and their relative effectiveness; and type 3 describes how interventions were implemented, their contextual conditions, and how they were received by target populations (2009) (Table 2).

Table 2: Types of scientific evidence

Characteristic	Type One	Type two	Type Three
Typical data/relationship	Size and strength of preventable risk-disease relationship	Relative effectiveness of public health intervention	Information on the adaptation and translation of the effective intervention
Common setting	Clinic or controlled community setting	Socially intact groups or community wide	Socially intact groups or community wide
Example	Smoking causes lung cancer	Price increases with a targeted media campaign reduce smoking rates	Understanding the political challenges of price increases to particular audience segments
Action	Something should be done	This particular intervention should be implemented	How an intervention should be implemented

Source: Adapted from Brownson, Fielding, Maylhan, 2009, p179.

Type 3 evidence in particular illustrates some of the more pressing challenges that face public health improvement strategies in community based settings. Type 3 defines parameters for evidence which recognise interventions as involving many factors, some of which interact, and including characteristics such as individual educational levels, organisational culture and staff skills, sociocultural history and

political interests and ideologies (Rychetnik, Frommer, Hawe, Shiell, 2002; Brownson, Fielding and Maylhan, 2009). A lack of type 3 evidence might make it difficult or impossible to determine why an intervention was successful (or not), and may aid in the identification of a 'type III error' (evaluating a program that has not been properly implemented) (Linnen & Steckler, 2002).

The consideration of context (in all its forms) in the development of public health evidence enables evaluators to address the assumptions prevalent in traditional hierarchies of evidence (e.g. the relationship between internal validity and external validity) when moving into the next stage of intervention specification (Kemm, 2006). Recent research lends credence to the validity of Brownson's range of evidence types and the importance placed on contextual factors for implementation. For example it underlines Glasgow and Chambers (2012) proposal to develop the science of implementation, and Greenhalgh's argument that 'you can't tame complexity without loss of meaning – sometimes very profound loss of meaning' (Greenhalgh, 2012, p96). In short, evidence based public health should be based on an understanding and acceptance of complexity and context. This understanding and acceptance is required to facilitate the incorporation of wider social and political issues into health behaviour theories used in practice, in order to develop more robust, sustainable, acceptable and effective public health interventions.

These perspectives on public health evaluation and implementation are relevant to the present study because they illustrate the importance of a range of theories and concepts about how evaluation can be done, why, and for whom it is conducted.

Summary

In this section I have addressed and described some of the key literature in health promotion and improvement that is directly relevant to the understanding of the

present study. In section 2, I define and describe mental wellbeing, its correlates, and measures used to evaluate mental wellbeing among individuals and populations.

SECTION 2: UNDERSTANDING MENTAL WELLBEING

In this section I present the concepts of well-being[6] and mental wellbeing that I will apply in my study, and I describe research presenting factors associated with mental wellbeing and measures of mental wellbeing. I then review the literature that exists on the use of one of these tools in public health improvement interventions, the Warwick-Edinburgh Mental Well-being Scale (WEMWBS).

3.3 CONCEPTS OF MENTAL WELLBEING IN THE 21ST CENTURY

The term *well-being* encompasses physical, social and mental wellbeing concepts and states of being. In a broad sense, an individual is in a state of optimal well-being by possessing:

> *"A positive physical, social and mental state;…It requires that basic needs are met, that individuals have a sense of purpose, that they feel able to achieve important personal goals and participate in society. It is enhanced by conditions that include supportive personal relationships, strong and inclusive communities, good health, financial and personal security, rewarding employment, and a healthy attractive environment." (Whitehall well-being working group, 2006)*

[6] Here I distinguish between 'well-being' and 'mental wellbeing' to reflect usage in the literature. 'Well-being' generally reflects overall or all-around well-being, while mental wellbeing reflects the specific psychological/mental component.

One group who also measured ‘well-being’ in the past were economists. Perhaps in contrast to earlier mentioned interpretations of well-being, economists tended to measure well-being as a marker of social progress, reflected through household income and home ownership. This has excluded informal forms of capital such as social and psychological ties among communities and individuals. Recently, this type of well-being measurement has been superseded in the US and Europe by one that incorporates a broader perspective of well-being measures used as proxies of social progress (Diener & Seligman, 2004; Huppert et. al., 2008; Beddington et. al., 2008; Stiglitz, Sen, Fitoussi, 2009). Building on the Stiglitz report (2009), the UK Office for National Statistics undertook a nation-wide ‘well-being debate’ in 2010 and 2011 which focused on defining what matters in terms of well-being and what should be included in a national well-being measure (Office for National Statistics, 2011). The answers included health, good connections with friends and family, good connections with a spouse or partner, job satisfaction and economic security, and present and future conditions of the environment (ONS, 2011).

The term *mental wellbeing* can be used to describe the concept of positive psychological functioning and positive psychological states of being. It is a complex and multi-dimensional concept. It incorporates emotions like joy, happiness, calm, cognitive capabilities (such as self-acceptance, autonomy, motivation, interest and engagement) and satisfaction in relationships with others (Ryff, 1989, Huppert & Baylis, 2004). There are gaps in the UK knowledge base for understanding and measuring overall well-being (New Economics Foundation, 2009) and there is evidence which suggests that mental wellbeing is a very good indicator of how people and populations are able to function, cope with hardships in life and thrive (Huppert & Baylis, 2004; Ryff, Signer, Love, 2004; Keyes, 2007; Ryan, Huta, & Deci, 2008; Frederickson, 2001).

3.3.1 Functioning well

There are two main constructs by which concepts of mental wellbeing are commonly grouped: The first 'eudaimonic' wellbeing (also known as psychological wellbeing or positive functioning), centres on the fulfilment of personal potential and living a meaningful life. Ryff (1989) identified six domains of positive functioning and good psychological wellbeing: Self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth.

3.3.2 Feeling good

The second construct is known as 'hedonic wellbeing'. The hedonic approach is also known as subjective wellbeing (SWB) or positive affect, and refers to positive emotions and feelings, happiness, and maximising positive and minimising negative affective experiences. The majority of socio-economic literature using large cross-sectional datasets uses SWB, though its foundations are set in psychology (Diener, 1984, Ryan & Deci 2001).

3.4 CORRELATES OF MENTAL WELLBEING

Research has been conducted into the relationships between elements of everyday life and variation in levels of mental wellbeing. Some of this research is presented by theme below. There is no single agreed upon measure of mental wellbeing and there is debate among psychologists as to what the similarities and differences are between hedonic and eudaimonic wellbeing (Deci & Ryan, 2008).

It is worth noting that some studies claiming to measure mental wellbeing use measures designed for assessing mental health problems. These misnomers do not illustrate a lack of quality; rather they are indicative of the process of a developing body of research and measures.

3.4.1 Age & Gender

Mental wellbeing varies by age. Blanchflower and Oswald measured mental wellbeing using three types of measures, 'Taken all together...would you say that you are very happy, pretty happy, or not too happy?', On the whole...are you very satisfied, fairly satisfied, or not very satisfied?' and a psychometric tool, the GHQ-N6 (Goldberg & Blackwell, 1970). There is a 'U' shaped trend between age and mental wellbeing as young people generally experience the highest levels of mental wellbeing while levels are at their lowest during middle age, and increase around retirement age. Levels decrease again as people move in their 70's and 80's (Blanchflower & Oswald, 2008). Blanchflower and Oswald also found that American men and women reached their minimum level of mental wellbeing at different ages, men reaching their minimum around 50, while this occurred around the late 30's for women (2008). In Europe, gender differences were minimal, both men and women reach their minimum level of mental wellbeing around their 40's (Blanchflower & Oswald, 2008). A 1996 study provides a smaller-scale perspective on mental wellbeing and gender. Umberson and colleagues studied the effect of social relationship differences between men and women finding that gender did not significantly affect the association between relationships and depression. The study found that supportive relationships are equally good for men and women, but that the quantity and quality of relationships men and women have affect them differently (Umberson et. al.,1996).

Among young people, Gutman & Vorhaus (2012) found that children with higher general well-being levels showed better educational outcomes later in life, using data from the Avon Longitudinal Study of Parents and Children (ALSPAC). However, the authors used measures of emotional problems and mental ill health to report on well-being levels, and are therefore reporting that the absence of

emotional problems and mental illness reflected these better outcomes, and limits the ability to provide in depth insight into mental wellbeing levels.

3.4.2 Physical functioning

Mental wellbeing is associated with physical health and functioning. People with high levels of mental wellbeing have better physical functioning at older ages, better self-rated health, reductions in cardiovascular biomarkers and decreased death rates in populations with physical disease (Ryan & Deci, 2001; Ryff et. al., 2004; Steptoe et. al., 2005; Chida & Steptoe, 2008). A 2000 study by Achat and colleagues measured optimism, depression, and physical health (using the SF-36) and found that optimism predicted less physical pain, greater vitality, and better self-rate health; it did not predict physical or social functioning while depression was predictive of reduced functioning in all of the SF-36 domains (Achat et. al., 2000). Achat's finding is somewhat contrary to the research above, and suggests further investigation into these associations, as well as measures of subjective and objective physical functioning. Another issue related to physical functioning is sleep. Among adults, poor sleep is a common problem that impairs functioning in daily life (Strine & Chapman 2005). Steptoe and colleagues examined the association between psychosocial stressors and sleep problems and described the relationship between hedonic and eudaimonic wellbeing, psychosocial distress and sleep disturbance. They found that both aspects of mental wellbeing attenuated the effect of social and psychological stressors on sleep, but only eudaimonic wellbeing was associated with good sleep after adjusting for other relevant factors (Steptoe et. al., 2008).

3.4.3 Individual factors

Personality traits influence levels of mental wellbeing in individuals. A 1998 systematic review of personality traits and SWB found the traits 'extraversion' and

'agreeableness' were strong predictors of positive affect, while 'neuroticism' most strongly predicted dissatisfaction with life, low levels of happiness and negative affect (DeNeve & Cooper, 1998). According to Diener & Lucas (1999), the correlation between neuroticism and the negative component of SWB are indistinguishable from each other suggesting they are somewhat tautological (from Ryan & Deci, 2001). More recently, Steel and colleagues examined the relationship between personality and SWB through a critical assessment of meta-analyses, finding methodological weaknesses that seemed to attenuate the relationship. Using multivariate analysis, Steel found instead that personality can account for as much as 63% of the variation in SWB between individuals (2008). In line with the eudaimonic perspective, the tendency for individuals to 'savour' experiences is also a predictor of mental wellbeing in young and old people. 'Savouring' is form of emotional regulation which people use to maintain positive emotional experiences; it is associated with optimism, self-esteem and internal locus of control (Bryant, 2003 from Tugade & Fredrickson, 2006). A longitudinal study of self-concept and health behaviour in young people found that weak self-concept (reflecting eudaimonic aspects) in adolescent boys was predictive of low levels of physical activity, and predictive of obesity in boys and girls (Park, 2003).

3.4.4 Socio-demographic factors

The traditional indicators of social status such as income, employment and education are associated with measures of subjective wellbeing, (Oswald 1997; Dolan, Peasgood, White, 2008, Ryan & Deci, 2001). However these associations are not all clear.

In a recent review, relative income rather than absolute income was strongly associated with subjective wellbeing (Dolan, Peasgood, White, 2008). A UK study found that unemployed persons living in areas with high unemployment rates have

higher average levels of mental wellbeing than unemployed people living in areas with low overall unemployment (Clark & Oswald 1994, see Shields & Price, 2005). Similarly, unemployment can have a greater negative impact on social status, identity and a sense of purpose, and can ultimately result in greater losses to wellbeing than to income (Winkelmann & Winkelmann, 1998; Oswald, 1997). It could be that there are normative behaviours which might better explain variation in mental wellbeing than unadjusted associations between mental wellbeing and socio-economic variables. Marmot's review of health and social inequalities (2010) illustrated how those most socially disadvantaged fare much worse than those who are less disadvantaged, finding that people in routine and manual classes acquire comparable levels of disability 15 years sooner than their professional and managerial class-counterparts (Marmot et. al., 2010).

Environments identified as areas of deprivation are associated with many factors potentially impacting upon health and wellbeing including physical hazards, sleep disturbance, violence, greater crowding and exposure to noise, and lack of access to green or open spaces and community facilities (Taylor, Repetti, Seeman, 1997; Evans, 1997, Ellaway & Macintyre, 1998; Guite, Clark, Ackrill, 2006). Good health and higher levels of wellbeing have been associated with strong emotional and social support experienced by individuals and communities (Umberson et. al., 1996, Stewart-Brown, 1998, Bloom et. al., 2001; Ryan & Deci, 2001).

While it is clear that many factors are associated with mental wellbeing, it is perhaps equally clear that mental wellbeing is a broad term as well as a broad concept and can be defined, understood and subsequently measured in a multitude of ways.

3.4.5 Measuring mental wellbeing

In many of the studies of mental wellbeing described above, mental wellbeing is measured using measures of SWB (which includes more hedonic aspects of mental

wellbeing) or mental disorder. Practically, there is little room for lengthy scales or interviews in large cross-sectional surveys, so brief scales provide some indication rather than none at all. However, using scales that are designed to measure mental illness when the variable in focus is mental wellbeing could be confusing at best (using misnomers) and misleading at worst (when surveys inform policy action and service provision) suggesting a need to incorporate specific mental wellbeing measures into social and health surveys.

A good example of why it is necessary to have distinct scales for the measurement of positive mental health and mental wellbeing comes from Bech, who addresses the distinctions between the measurement of mental health problems and mental wellbeing. Bech and colleagues compared the SF-36 mental health component (Ware and Sherbourne, 1992) and the all-positive WHO-5 Wellbeing Index (Bech, 1998), finding that although the SF-36 mental health component included positive items specifically to reduce ceiling effects, there was a lower ceiling effect observed in the WHO-5, finding it a more appropriate measure for identifying psychological wellbeing in the general population (Bech, et. al., 2003). This finding suggests that where ceiling effects are observed, more sensitive mental wellbeing measures provide greater understanding of the correlates and determinates of positive mental health in the general population where measures of mental illness cannot.

Tools designed to measure both hedonic and eudaimonic elements of mental wellbeing are relatively new compared to those designed to measure SWB or mental disorder. Identifying correlates of mental wellbeing and understanding the best approach to modify the correlates can provide insight for targeting mental wellbeing promotion areas.

Hedonic wellbeing is characterised by positive feelings and has been measured using the Satisfaction with Life Scale (Diener, 1984) and the Positive and Negative

Affect Scale (PANAS) (Watson et. al., 1988) among others. Assessments of Eudaimonic wellbeing, characterised by positive psychological functioning, include early scales such as the Affect Balance Scale (Bradburn, 1969) and the Psychological General Wellbeing Index (PGWB) (Dupuy et. al., 1984), both of which mixed positive and negative items, or Ryff's psychological wellbeing scale (RPWB) which identified six theoretical dimensions of psychological wellbeing (Ryff & Keyes, 1995). However the construct validity of this measure has been called into question (Kafka & Kozma, 2002, Springer & Hauser, 2006). The Mental Health Continuum (MHC) places mental wellbeing on a continuum ranging from languishing (poorest mental health), to flourishing (best mental health) and mirrors psychiatric diagnostics by characterising symptoms of syndromes of wellbeing (Keyes, 2002). The World Health Organisation developed the WHO-Five Wellbeing Index (Bech, 1998), one of the earlier all-positive scales. Another early scale assessing positive and negative items in relation to mental wellbeing was the 96-item Affectometer 1 (Kammann, Christie, Irwin, & Dixon, 1979; Lichter, Haye, & Kammann, 1980), later shortened to the 40-item Affectometer 2 (Kammann & Flett, 1983). It was from the Affectometer scales that the positively-worded Warwick-Edinburgh Mental Well-being Scale (Tennant et. al., 2007) evolved, which I use to measure mental wellbeing in the present study.

3.5 WARWICK-EDINBURGH MENTAL WELL-BEING SCALE

In this section I provide an overview of the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) and discuss public health interventions which have used WEMWBS to evaluate mental wellbeing outcomes.

The WEMWBS is a positively worded 14-item scale comprised of hedonic and eudaimonic constructs of mental wellbeing and has been found to be valid and

reliable in English and Scottish populations of people aged 16 to 75+ (Tennant et. al., 2007).

The development of WEMWBS came from the need for robust, population-based measures of positive mental health/ mental well-being (Tennant et. al., 2007) based on two main needs: one, existing scales (focusing at least in part on poor mental health) showed 'ceiling effects' at population levels. Ceiling effects denote a distinct upper limit in distribution of scores, and this restricts variance within that concentration of scores and attenuates the ability of the scale to reflect the distribution within that population (Lewis-Beck, Bryman, Liao, 2004). Second, mental health promotion practitioners required measurement tools to evaluate their programmes, the ethos of which could be undermined by the use of negative measures of mental ill-health (Tennant et. al., 2007). WEMWBS evolved from the Affectometer 2 (Kamman & Flett, 1983). The Affectometer 2 had demonstrated good face and construct validity in the UK and good test-retest reliability over time, but was long (40 items), showed very high internal consistency (and therefore possible item redundancy), and had higher social desirability bias compared to other similar scales (Tennant, et. al., 2007).

The aim of developing WEMWBS was therefore to build on previous measures and encompass 'affective-emotional and cognitive-evaluative' dimensions in psychological functioning' using a single construct, which is simple to administer/complete and succinct; an important factor for population surveys (Tennant et. al., 2007).

The scale is scored by adding up each item for a total score ranging from 14 to 70. For each item, participants can select a response option from 'none of the time' (item score=1) to 'all of the time' (item score=5), see Figure 11 below.

The WEMWBS performed well psychometrically. It had good internal consistency, (Chronbach's alpha 0.89 in the student sample; 0.91 in population sample), was highly and significantly correlated with positive comparator scales such as the PANAS-P (r=0.71) and negatively correlated with PANAS-N (r=-0.54), had good test- retest reliability over two weeks (r=0.83), and had levels of social desirability lower than those of the Affectometer 2 and similar to other comparable scales (Tennant et. al., 2007). The median WEMWBS score was higher among men than women, and overall the median score was 50 among the student sample and 51 among the population sample, with inter-quartile ranges of 45-55 and 45-56, respectively.

Since the validation and publication of the WEMWBS in 2007, WEMWBS has undergone a RASCH model analysis to identify further scalability and from that developed a short WEMWBS, the 7 item 'SWEMWBS' (Stewart-Brown et. al., 2009). WEMWBS has also been validated for use in young people aged 13-15 (Clarke et. al., 2011) and in different ethnic groups (Taggart, et. al., 2013).

Figure 11: The Warwick-Edinburgh Mental Well-being Scale

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts.

Please tick the box that best describes your experience of each over the last 2 weeks

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

3.6 PUBLIC HEALTH IMPROVEMENT INTERVENTIONS USING WEMWBS

As a mental wellbeing measurement tool, WEMWBS has been in use since 2007. Given its short life span, it is now gaining momentum as a useful tool in public health practice, particularly since its inclusion as a measure in the national public

health outcomes framework (Improving Outcomes and Supporting Transparency, 2011, 2013). At the commencement of this study, there were relatively few peer reviewed publications describing the use of WEMWBS as a public health outcome measure. Research by Maheswarwan and Colleagues assessed the sensitivity to change in WEMWBS to determine its suitability for use in public health interventions measuring change in mental wellbeing (2012).

The authors assessed the sensitivity to change in 12 community based interventions measuring mental wellbeing using WEMWBS. They found that mean change in WEMWBS score ranged from -0.6 to 10.6 WEMWBS points. In 9 out of 12 of the studies, the probability of change (P) result denoted responsiveness by having a 95% confidence interval lower limit greater than 0.5. The standard error of measurement (SEM, detects change at the individual level) and the standardised response mean (SRM, detects change at the group level) results indicated that important improvement had occurred in 12.8% to 45.7% of participants. A SEM greater than 1 or 2.77 (depending on the threshold used) equated to statistically important changes at the individual level in WEMWBS scores of between 3 and 8, meaning that participants whose scores improved between 3 and 8 WEMWBS points demonstrated meaningful improvements in their mental wellbeing (Maheswarwan, Weich, Powell, Stewart-Brown, 2012).

The range of studies involved in the above research provide a benchmark for characterising the types of interventions where mental wellbeing is measured as a primary or secondary outcome. All but one intervention was conducted among adult, mixed gender populations. Characteristics include:

Table 3: Range of interventions measuring mental wellbeing using WEMWBS			
Type of Evaluator	**Type of population targeted**	**Type of interventions**	**Duration range**
Local Authority/ partnership	Healthy self-referred adults, Carers,	Physical activity & healthy lifestyle, Complementary and alternative medicine (CAMS)	6-12 weeks
University Researchers	Healthy parents, individuals with a mental illness, self-referred adults, healthy recruited adults, healthy adolescents	Parenting improvement intervention, Recovery programmes, Online CBT skills training, compassion training, mindfulness training in schools	1 week – 12 weeks
Charity /third sector	Healthy self-referred adults, individuals with a mental illness, parents	Audio intervention, group based parenting programme, 1 to 1 sessions for healthy eating advice, physical activity and relaxation	8-12 weeks
NHS	individuals with a mental illness	Drug monitoring services by different health professionals	12 weeks

Source: Information adapted from Maheswaran et. al., 2012.

The table above illustrates a range of characteristics and evaluators. Most interventions were evaluated over the course of 8 to 12 weeks. The interventions focused on improving mental wellbeing explicitly, increasing or developing a skill, addressing a mental health problem or mental illness, or increasing physical activity and healthy lifestyle behaviours. At least two interventions were delivered in groups, one delivered 1 to 1 support, four focused on individual-level intervention and behaviour and for the remaining five it was unclear if the intervention was delivered in a group or individually.

The analysis showed that baseline WEMWBS scores were lower than known mean population scores (50.7 from Tennant et. al., 2007) in all but two interventions. Overall the authors report that ‘responsiveness was independent of the type of intervention and sample size...’ (Maheswaran et. al., 2012, p5). This suggested that within this wide range of different types of interventions and considerable variation in sample size, evaluator, and population group, a change in WEMWBS was detected in nine of the twelve studies, with half of the studies showing a strong

probability of detecting change in WEMWBS over the course of the intervention (inclusive of some of the nine former studies).

These findings show that there is a range of types of evaluations using WEMWBS which have shown that it is a suitable measure for detecting change in mental wellbeing.

In addition to Maheswaran, there is a small, (growing) range of peer reviewed literature available on interventions measuring mental wellbeing outcomes using WEMWBS.

I examined reports of interventions using WEMWBS, drawing on evaluation criteria from DesJarlais et. al., 2004; Rychetnik, Frommer, Hawe, Shiell, 2002):

Well conducted evaluations using WEMWBS as an outcome measure included Lindsay, Strand and Davis's parenting interventions (2011). Their evaluation had clear aims, address aspects of effectiveness, and described the origins of each intervention and its applicability in UK settings. The findings from this evaluation were included in Maheswaran's study, and showed that in a comparison of three types of parenting skills development interventions, one had a significantly smaller effect on mental wellbeing of parents than the other two. The authors were not able to identify the mechanisms for this difference in the programmes, but do discuss possible outcomes related to potential programme specification, such as differences of context. Other clear and well-conducted evaluations include a study by Collins and colleagues (2012), which examined the effect of workplace talking therapy/counselling on the mental wellbeing of participants, and a study by Braiden and colleagues (2011) examining the effect of a parenting programme on the mental wellbeing of bereaved parents; both found evidence of improvements in mental wellbeing.

Other reports of evaluations using WEMWBS as an outcome measure of mental wellbeing lack description of context and setting. Crone and colleagues (2012) evaluated the effect of an art intervention on people with a range of potential mental health difficulties referred by their GP. The effect of holding the intervention in a GP practice, or the differential effect of holding classes during the day on younger working individuals were not addressed. Secker and colleagues also evaluated the effect of an arts intervention on mental wellbeing in people with mental health problems, using a mixed methods approach and found significant improvements in WEMWBS scores (mean difference= 5.94) from time one to time two (10-15 weeks). Odou and Vella-Brodrick (2011) conducted a mixed methods evaluation of the efficacy of positive psychology interventions aiming to increase mental wellbeing, and assessed the role of mental imagery ability. They found little effect of the interventions on mental wellbeing but may have 'over adjusted' in their analyses by adjusting WEMWBS scores for hope (using the Trait Hope Scale, Snyder, et. al., 1991)) and gratitude (using the gratitude questionnaire GQ-6, McCullough, Emmons, Tsang, 2002)) which may have attenuated the effect of the intervention on WEMWBS scores.

One study using WEMWBS examined the impact of a changed office working environment on the mental wellbeing of staff (Thatcher and Milner, 2012). The authors report that WEMWBS was used, although they did not report WEMWBS scores or provide a description of analysis. This study reflects a lack of attention to the exact use and calculation of WEMWBS scores, since a free WEMWBS user guide is available.

Outcomes measured in addition to WEMWBS were generally also positive-focused measures and included aspects of social inclusion (Secker, 2011), parenting behaviours such as parenting efficacy and satisfaction with parenting (Lindsay, Strand, Davis 2011) and positive and negative affect (PANAS) (Odou and Vella-

Brodrick, 2011) were included. One study measured WEMWBS together with 'negative' measures, focusing on parental stress and grief (Braiden et. al. 2011)

Overall, strengths of these studies include a supportive rationale for using WEMWBS in a variety of suitable settings, consideration of participants' needs, involvement, and perspective (particularly from Crone et. al., 2012; and Secker et. al., 2011), and attention to formative aspects of intervention design.

Weaknesses include a lack of description of evaluation processes, data collection errors reducing the number of valid cases for analysis (Secker et. al., 2011 and Lindsay, Strand, Davis, 2011), and analytical limitations such as small comparison group sizes and therefore lack of sufficient power to detect change among subgroups (Odou and Vella-Brodrick, 2011).

Summary

In this section I have introduced the correlates of mental wellbeing, a range of measures in use including the WEMWBS, the measure I use in the present study to evaluate mental wellbeing outcomes. I described the validity of WEMWBS and its ability as a measure to detect change in both individuals and populations, and I have reviewed some published research using WEMWBS as a measure of mental wellbeing in health improvement interventions. In the next section, I state my research questions.

3.7 RESEARCH QUESTIONS FOR THIS THESIS

This literature review has demonstrated that there is little known about the effect of public health improvement interventions (such as: Alcohol treatment interventions, Wellbeing Mentors in Schools, and Physical Activity interventions among families and older people) on the mental wellbeing of participants, or how the introduction of a relatively new concept in public health organisations might affect the improvement programme as well as the programme staff. In my research, I attempt to investigate these issues in order to provide a more realistic account of the practicalities of public health practice within the context in which that practice occurs.

Given the lack of understanding of mental wellbeing improvement in public health and the emphasis placed by the Department of Health on improving mental wellbeing in the population, this research seems warranted. I aim to answer 6 research questions. The questions (and objectives) are illustrated in the table below.

Table 4: Research objectives and questions		
No	Objectives	Research Questions
1	Examine the literature on the implementation and evaluation of public health improvement interventions and on the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) as an outcome measure for evaluating mental wellbeing in public health improvement interventions.	**What evidence exists in the literature on the implementation and evaluation of public health improvement interventions, and on WEMWBS as an outcome measure for evaluating mental wellbeing in public health improvement interventions?**
2	Measure mental wellbeing levels in the population of Coventry and identify the correlates using WEMWBS.	**What are the levels of mental wellbeing in the population of Coventry and what are the correlates, using WEMWBS?**
3	Measure the effect of CHIP interventions on mental wellbeing outcomes (using WEMWBS) evaluated using a quasi-experimental before-and-after design.	**Do CHIP interventions affect the mental wellbeing outcomes of participants when evaluated using a quasi-experimental before-and-after design?**
4	Identify the themes of CHIP stakeholder's attitudes and views regarding programme implementation and evaluation, public health improvement practice and mental wellbeing outcomes.	**What themes are identified from CHIP stakeholder attitudes and views regarding CHIP implementation, evaluation, public health improvement practice and mental wellbeing outcomes?**
5	Combine quantitative and qualitative findings on CHIP implementation, evaluation, practice, and mental wellbeing outcomes using a mixed methods matrix.	**How can quantitative and qualitative findings on CHIP implementation, evaluation, practice and mental wellbeing outcomes be combined using a mixed methods matrix?**
6	Draw conclusions based on the findings for Coventry and for the implementation, evaluation and practice of 'real world' public health improvement interventions and programmes.	**What conclusions can be drawn from the findings for Coventry and for the implementation, evaluation and practice of 'real world' public health improvement interventions and programmes?**

3.8 CHAPTER STRENGTHS AND LIMITATIONS

There are some strengths and limitations to my literature review methods. In section one, I have reviewed literature on aspects of public health improvement literature which are relevant and timely for the present study. However it is possible that there may be relevant studies or literature that I have overlooked. On the other hand, I have demonstrated a knowledge of the conceptual and formative literature on the key aspects of my thesis topics and these have underpinned my study overall.

In the second section of this review I introduced the key concepts and correlates of mental wellbeing, the WEMWBS measure, and I described examples of evaluations of interventions using WEMWBS as a public health outcome measure. It is likely that I have not incorporated all the available literature which might be relevant to my study. There is a history of study of subjective wellbeing, psychological wellbeing, happiness and mental health from various disciplines that I have not detailed here, but I have addressed the core concepts of mental wellbeing for application as a public health outcome.

CHAPTER SUMMARY

The above literature has addressed the issues I perceive as central to this thesis. I have defined and discussed the core concepts of public health improvement, improvement interventions, types of evaluation and issues associated with evaluating health improvement interventions. I have outlined the definition and range of approaches in evidence based public health.

I introduced the concept of mental wellbeing and described the known correlates and measures. I described WEMWBS as a population measure, and characterised its utility as a measure of change in mental wellbeing outcomes among individuals or groups when evaluating health improvement interventions.

I have demonstrated the need to understand better how the complexities of public health improvement interventions can be evaluated in real-world community settings, particularly regarding mental wellbeing.

In the next chapter I describe my methodology and how it supports the types of research designs and analyses I used in my research.

CHAPTER 4: METHODOLOGY

4.0 METHODOLOGY

In this chapter I describe the setting of my study, my epistemological approach, and my study design. I then describe methodological approaches to each research objective.

I explain the strengths and limitations of each objective and describe how my choice of methodology and methods determine the appropriateness, quality and relevance of the findings.

4.1 STUDY SETTING

This study was conducted in Coventry, West Midlands as part of the Coventry Health Improvement Programme evaluation (CHIP). CHIP implementation occurred exclusively in the city of Coventry.

4.2 REFLEXIVITY

This section contextualises my role as a researcher and evaluator in this study. My role is an important methodological consideration because it shaped the approaches, decisions and choices I made in this study.

I am a postgraduate student at the University of Warwick and my research was funded by the Coventry Partnership (referred to as 'the Partnership'). The funding agreement stipulated that I was responsible for:

- Advising on collection of data, conducting analyses, and reporting dissemination of the Coventry Household Survey 'Wellbeing Report' years 2010-2012,
- liaising with programme managers and project leaders through regular meetings,

- designing and analysing the evaluation of CHIP projects using mental wellbeing as an outcome; reporting and disseminating the findings to relevant audiences,
- writing annual progress reports for CHIP programme management staff.
- 'synthesising the overall understanding' of the impact of CHIP on mental wellbeing in Coventry to inform future Partnership service directions.

This PhD has been designed around a set of projects which together make up CHIP. This means that my research designs as well as my duties and responsibilities were often dependent on the organisation, progress, and level of capacity unique to each project. My role and influence in the design and organisation of each of the projects varied. Table 5 illustrates how my role as a researcher overlapped with my duties and responsibilities as a member of the Coventry evaluation team and it also explains my role in design and data collection of each project:

Table 5: Role in design and data collection in each aspect of the present study		
Project	**Role in design**	**Role in collection**
Coventry Household Surveys (2010-2012)	Joint role. I was part of a selection and advisory committee appointing and liaising with research consultant firms on fieldwork, data, and analysis. I contributed to the design of survey questionnaires. Decisions were made by group consensus.	Advisory role. I monitored and advised on the data collection undertaken by the external agency appointed for each year.
Mental wellbeing outcome evaluations	Joint role. I designed quasi-experimental before-after evaluations to be integrated into five interventions. Because the interventions were on-going at the evaluation commencement, I worked with project stakeholders to integrate the evaluations into existing project structures taking account of stakeholder capacity. This role was contingent on agreement and cooperation of implementation stakeholders in each project. I was dependent on the project staff's ability and willingness to complete the evaluation as intended.	Advisory role. I guided and advised project staff to collect WEMWBS data consistent with WEMWBS guidance. Arrangements for collection varied depending each project's capacity. For Wellbeing Mentors, Fit as a Fiddle (FAAF) and Alcohol projects I collated raw WEMWBS forms and conducted data entry and analysis. I received a completed dataset from One Body One Life (OBOL) in an excel spread sheet.
Stakeholder Interviews	Individual role. I developed all aspects of interview research design. This included ethical considerations, protocol, revisions to guide, recruitment and contact with participants.	Individual role: I conducted and digitally recorded interviews with CHIP stakeholders (n=15).

While the collection and analysis of quantitative data is at lower risk of alteration by the researcher's personal influence, the collection of qualitative data is at risk of bias. For example, the interviewer and interviewee might disagree (e.g. that mental wellbeing is important to measure; that mental wellbeing will improve due to the programme). This is due to CHIP aims which may differ explicitly or implicitly. Thus the dual nature of my obligations to the Partnership, and to my research, and my supervisors might influence the design and process of my research. In addition to my obligations to the partnership, at the time of interviews in spring/summer 2012, I had been embedded in mental wellbeing related activities with Coventry for over 2 years. I had attended multiple meetings with some of the interview participants and had professional working relationships with them. In this sense I was both an insider (having worked with participants on projects either for evaluation or the household surveys) and an outsider (participants were aware I was from the university and I was researching CHIP).

In order to account for my dual-role, and the range of biases that I and my participants could experience, I made contemporaneous notes of my interactions and thoughts after each interview and considered how my role as either an outsider or an insider was reflected in each interview. During interview coding, I coded 'insider-based' interaction between myself and the interviewee. I did this to constructively reflect and critique these interactions, but this critique is not something I report in this thesis.

4.3 STUDY EPISTEMOLOGY

Epistemology (the study of knowledge) is important in understanding public health practice and evaluation because paradigms of thought used in public health differ (Baum, 1995). Paradigms used in health sciences include positivism/objectivism, interactionism/ interpretivism, and realism/subtle realism (Fulop, Allen, Clarke & Black, 2002).

In this study, my epistemological position and the paradigm from which I work is 'subtle realism' (Hammersley, 1992). Subtle realism articulates four premises: 1) The world that we live in is also the one we study, and we cannot be independent of it 2) there is a 'true' reality that exists outside of our perception/claims about it 3) a subtle realist can never be certain that the knowledge produced truly represents an objective truth because this can never be validated, but this shouldn't be a deterrent in the quest for accurate knowledge in which we can be reasonably confident 4) the goal of social research is to represent reality (or realities), not reproduce it (Hammersley, 1992, Murphy, 2002).

The subtle realist position is appropriate paradigmatically for mixing methods because it supports the recognition that there can be multiple valid representations of a given phenomenon. This differs from the positivist tradition in quantitative research which posits that researchers can remain independent of objective truths and identify objective truths. This is also directly opposed to traditional constructivist traditions in qualitative research, which posit that all truths are socially constructed and do not exist separately from subjective interpretation (Sale, Lohfeld, & Brazil 2002, Smith, 1983). The assumptions of subtle realism create a 'third way' in philosophically understanding how objectivist and interpretivist paradigms can be used in the same study, because multiple representations can be experienced from differing, non-contradicting perspectives, *each of which are potentially true* (my

emphasis) (Murphy, 2002). The idea of 'multiple representations of reality' is consistent with wider principles of public health research because of the multiplicity of paradigms relevant to understand human behaviour and determinants of health including: epidemiology, psychology, sociology, physiology, politics and economics, among others.

Pragmatism is an approach which subtle realists use to emphasise a critical recognition of the context in which knowledge is produced. It does not discount or exclude empirical data, but supports the recognition that there are multiple perspectives of a 'truth' being examined. Pragmatism denotes an interest in "examining practical consequences and empirical findings to help in understanding the import of philosophical positions…to help in deciding which action to take next as one attempts to better understand real-world phenomena" (Johnson & Onwuegbuzie, 2004, p17).

I have adopted subtle realism as an epistemological position and pragmatism as a methodological approach as the foundations for this study. They reflect the multidisciplinary nature of public health and allow me as comprehensive an understanding as possible of the programme and projects I am investigating (Øvretveit 1998, Pawson & Tilley, 1997, Johnson & Onwuegbuzie, 2004, Creswell 2009).

4.4 STUDY DESIGN

I chose to conduct a mixed methods study because quantitative analysis cannot fully account for the subjective attitudes and beliefs towards interventions and outcomes which might influence public health knowledge and action. In order to consider my findings in the context of programme aims and to contextualise them in

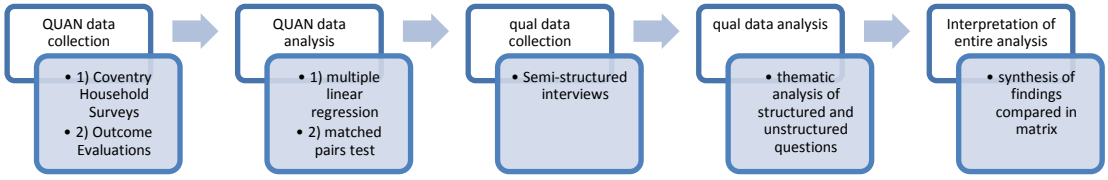
terms of public health knowledge, theory and practice, a more robust understanding can be achieved through the use of both quantitative and qualitative methods. This is consistent with the pragmatic view that “research methods should follow research questions in a way that offers the best chance to obtain useful answers” (Johnson & Onwuegbuzie, 2004, p18).

The mixed method design I used was the Sequential Explanatory Design (Creswell, 2009; Ivankova, Creswell, Stick 2006). This design combines quantitative and qualitative sources of data at different phases of the research and has one dominant method, followed by a subordinate method. The figure below denotes the dominate quantitative method as ‘QUAN’ and the subordinate method as ‘qual’.

4.4.1 Sequential explanatory design characterisation

In this design, methods can be integrated at each or any stage, but often this occurs in the ‘interpretation’ stage of analysis (Ivankova, Creswell, Stick 2006). I have chosen to integrate my methods in the interpretation stage. Quantitative data are collected and analysed first, followed closely by the development of the qualitative interview guide and collection of qualitative data. Qualitative data are analysed, and I synthesised the quantitative and qualitative findings using a mixed methods matrix (Figure 12).

Figure 12: Process of Sequential Explanatory Design (adapted from Creswell 2009)



Despite the popularity of mixed methods in health services research, relatively little has been published to establish definitive criteria of quality for such studies (O'Cathain, Murphy & Nicholl, 2008a). However several methodologists draw attention to typologies from which mixed methods designs can be constructed (Greene, Caracelli & Graham, 1989, Bryman, 2006) and highlight important aspects of quality when critically assessing mixed methods studies (Bryman, 2006, O'Cathain, Murphy & Nicholl, 2008a, Creswell, 2009). These aspects of quality highlight the importance of addressing

- feasibility of each component,
- justification of mixing methods,
- timing of collection,
- priority or weighting of each method
- function or purpose of integration,
- stage at which data are integrated,
- methods and mixing methods clearly communicated or described,
- appropriateness of design for the research question(s)
- consideration of or adherence to rigour of design.

Because I have adapted my design process from Creswell, I present the aspects of quality and design structure as described in his book, congruent with the above design criteria: Timing, weighting, mixing and theorising (Creswell, 2009).

Timing: In the first phase of research quantitative data are collected (QUAN), and in the second phase qualitative data are collected which refer to the quantitative outcome evaluations (qual).

Weighting: There is a quantitative weighting because the quantitative data are collected first, at multiple time points and address two research questions, whereas the qualitative findings address one research question. Though the collection of the quantitative data is more prominent, the analysis and integration of qualitative and quantitative data subsequently remain of equal importance in meeting the remaining research objectives to synthesise the findings.

Mixing: The data are 'mixed' at two points during the study: first when the qualitative interviews reference quantitative data collected, and second at the interpretation stage when the findings from QUAN and qual are integrated in a matrix. The purpose of mixing methods in the present study was to measure "overlapping but also different facets of a phenomenon, yielding an enriched and elaborated understanding of that phenomenon". This is characterised by Greene and colleagues as 'complementarity' (Greene, Caracelli, Graham, 1989, p258). This type of mixing could also be considered as providing 'expansion', seeking to "extend the breadth and range of enquiry by using different methods for different enquiry components" (Greene, Caracelli, Graham, 1989 p259).

Theorising: I use a pragmatic approach to theorise my findings. I draw on several theories to help explain, understand and problematise emerging themes. I do not propose that any one theory or method can explain the phenomena under study. The theory of social phenomenology is, however, relevant in this case and, in my

opinion, underpins how human intersubjective experiences operate (Schutz, 1967, Rogers, 2003). See Appendix 4 for more information on how Schutz's theory relates to the present study.

In this section I have explained my epistemological position and its philosophical consistency with a pragmatic, mixed methods approach for the present study. I have described the rationale, structure and design of my overall study method.

4.4.2 Individual component considerations

In this section I describe each component of the study and explain why I chose that method.

Objective 1

Examine the literature on the implementation and evaluation of public health improvement interventions and on the use of Warwick-Edinburgh Mental Well-being Scale (WEMWBS) as an outcome measure for evaluating mental wellbeing in public health improvement interventions.

I conducted a review of literature to identify underpinning research and gaps in the current relevant literature. I used a mixture of conceptual and traditional review methods in this thesis. I chose a conceptual review to select key concepts of health promotion and health improvement literature relevant to my study. A conceptual review method was appropriate because it enabled a broad focus on the varied and vast body of health promotion and improvement literature and to address implementation and evaluation theories and concepts, as well as general concepts and principles relevant to the present study. I chose a traditional review method to focus on describing the correlates and concepts relevant to mental wellbeing, and to identify literature describing the use of WEMWBS as an outcome measure for

evaluating mental wellbeing in public health improvement interventions. This method allowed me to provide a subject overview of mental wellbeing as well as describe key insights from published public health literature using WEMWBS as an outcome measure.

In order to provide a background on each intervention topic, I also chose to conduct a 'rapid' review of each intervention topic: alcohol misuse treatment in adults (ALCOHOL), school-based mental health and wellbeing promotion (WBM), and physical activity promotion (One Body One Life (OBOL), Fit as a Fiddle (FAAF)). I focused on the interventions evaluated in the present study. This allowed me to familiarise myself with the key issues and evidence supporting each intervention, and to access high-quality reviews in respected databases (such as Cochrane and Campbell collaborations and NICE Public Health guidance). The rapid review is located in Chapter 6 alongside the CHIP intervention evaluations.

Objective 2

Measure mental wellbeing levels in the population of Coventry and identify the correlates using WEMWBS.

Population level mental wellbeing data were collected in this study. Prior to the start of my PhD, I had already worked in the Coventry Partnership to integrate WEMWBS into their household survey in 2009 and they were keen to survey the population over three years (Putz et. al. 2010). It was therefore a good opportunity to build on the momentum of Coventry's investment in examining population levels of mental wellbeing. The rationale for using a survey was supported by a lack of evidence on population distributions of mental wellbeing levels in England, since WEMWBS data at that point in time were mainly collected in Scotland (Braunholtz et. al., 2007), which may have reflected different population distributions or correlates. With no way to verify similarities or differences, it was logical to survey the Coventry population. Methodologically it was useful not only to monitor levels of mental

wellbeing in Coventry's population but also to achieve a wide range of responses to questions on issues from across the population over three years. The data could be manipulated statistically and could therefore allow for assessment of fluctuations in mental wellbeing. Monitoring and analysis of levels of mental wellbeing, it was thought by Coventry, could be used to develop geographically sensitive public health and social care services. For the present study, the surveys allow a benchmark/baseline comparison as well as offering a wider understanding of background levels and correlates of mental wellbeing in Coventry.

Objective 3

Measure the effect of CHIP interventions on mental wellbeing outcomes using WEMWBS, evaluated using a quasi-experimental before-and-after design.

The design I chose to address for this objective is a 'quasi-experimental before and after' design. This design was less intrusive and less time consuming to implement by intervention staff than other possible evaluation designs; an important practical consideration for evaluation adherence (Øvretveit, 1998). In a quasi-experimental design, participants act as their own controls and are tested before an intervention and after the intervention in a time series. Øvretveit states that evaluators using this type of intervention might focus on 'possible effects' rather than hypotheses and take a developmental approach to the evaluation and its possible outcomes (1998).

From a practical public health perspective, the quasi-experimental before-after design was appropriate for this study because it used the same resources and capacity from staff delivering and evaluating the intervention so they were not overburdened (Øvretveit, 1998, Glasgow, 1999). The objective was not to identify an efficacious intervention, where a randomised controlled trial might be appropriate, or to generalise the intervention to the entire population, where internal

validity is paramount. The purpose here was to measure the impact of CHIP interventions on the mental wellbeing in 'real-world' public health settings. By 'real-world public health settings', I mean settings in which

- participants are motivated to attend,
- participants may have a range of mental or physical issues (from none to multiple physical and psychological morbidities),
- interventions are delivered in community and neighbourhood environments and are subject to multiple external environmental conditions and constraints which construct the intervention, or may become part of it, from the point of view of the participant, or the staff delivering it,
- the interventions are delivered by community-level delivery staff or volunteers who may or may not have the necessary skills to maintain sufficiently standard conditions for evaluation of delivery - raising issues such as dose, fidelity, and participation of staff in training (Perry et. al., 1997, from Linnan & Steckler, 2002).

For these reasons, I used a quasi-experimental before and after design to evaluate interventions.

Objective 4

Undertake qualitative research to identify Stakeholder's attitudes and views regarding CHIP implementation, evaluation, public health improvement practice and mental wellbeing outcomes.

The purpose of conducting interviews with stakeholders was to describe their attitudes towards the three major elements of CHIP: the CHIP programme

evaluation, the practice of public health improvement, and their interpretation of mental wellbeing as they experienced it during CHIP.

The delivery and management of health action and decision-making are often value-laden and interviews allow the evaluator to discover how a stakeholder understands or responds to an intervention (Øvretveit, 1998, Esterberg 2002). This understanding and response are interpretations which help identify a layer of meaning not accessible through quantitative means. Brownson illustrates how interpretation has a critical role in public health decision-making: "significant decisions in public health must balance science and art, because rational evidence based decision-making often involves choosing one alternative from among a set of rational choices" (Brownson, Fielding, Maylahn, 2009, p193).

Qualitative interviews allowed me to understand stakeholders' views of the programme implementation and evaluation itself, the process and practice of managing and delivering interventions, and their interpretations of mental wellbeing as an outcome for CHIP interventions.

There were two possible main methods of analysis which I could have used to interpret the data: thematic and interpretive phenomenological analysis. I chose to use thematic analysis because I was concerned with nomothetic[7] themes and the commonality of stakeholder views. This was consistent with my pragmatic epistemological perspective.

[7] This term refers to themes that interviewees share between them, as opposed to ideographic themes, which concern the individual or unique themes from a single interviewee.

Objective 5

Combine quantitative and qualitative findings on CHIP implementation, evaluation, practice and mental wellbeing outcomes using a public health impact framework.

I used a combination of approaches to mix/integrate methods in this study. I used the work of Greene, Caracelli & Graham (1989) and Bryman (1984) to characterise my integration rationale as a combination of complementarity and expansion. I used Creswell's (2009) sequential explanatory design to structure the collection and analysis of data components. I used two approaches to integrate different types of data. In one approach I integrated quantitative survey data with quantitative evaluation data ('QUANT-QUANT') to compare population levels of mental wellbeing to mental wellbeing levels in the evaluation sample. In my second approach I integrated quantitative and qualitative findings ('QUANT-qual') using an adaptation of the mixed methods matrix approach outlined by O'Cathain, Murphy & Nicholl, (2010).

I chose to combine quantitative and qualitative findings because I could enhance and elaborate findings from one method with those from another method and also because I sought to increase the breadth and range of my enquiry (Greene, Caracelli & Graham, 1989). I chose the mixed method matrix because it provides adequate methodological structure without being rigid in defining criteria for use, and allows me to focus on each 'case' of issues surrounding each intervention (O'Cathain, Murphy, Nicholl, 2010). I adapted the mixed method approach by integrating the quantitative and qualitative findings after separately analysing each dataset (I conducted the integration after initial analyses instead of as the primary analysis) and because I narrowed the focus of the integration to aspects of 'process' identified in the quantitative and qualitative analyses. I have defined each 'case' as one of the three intervention topics: Alcohol, Wellbeing Mentors, and Physical

Activity. I consider these appropriate because both sets of methods collect information on the same group of phenomena: the interventions and their evaluations and the stakeholders involved in their implementation.

Objective 6

Draw conclusions based on the initial and integrated findings for Coventry and for the implementation, evaluation, and practice of 'real world' public health improvement interventions and programmes.

I drew out the themes from chapters 5 through 8 to consider them together. I critiqued these considerations using relevant theories and public health practice literature to form conclusions on what the implications are for future policy, practice and research.

CHAPTER SUMMARY

In this chapter I have described the epistemology underpinning my research design, discussed my reflexivity and my dual-role as an evaluator and a researcher in CHIP, and I have characterised the methods used to answer each of my research objectives.

In the next chapter I describe the first quantitative phase of my research using three cross-sectional surveys.

CHAPTER 5: CROSS-SECTIONAL STUDIES

5.0 CROSS-SECTIONAL ANALYSIS OF MENTAL WELLBEING IN COVENTRY

In this chapter I describe the collection and analysis methods and report results and summarise my findings.

I ask 'What are the levels of mental wellbeing in the population of Coventry and what are the correlates, using WEMWBS?' I will present the methods and findings from surveys conducted in 2010, 2011, and 2012 and examine differences and trends over this time period. I will summarise these findings. The results of this question provide a benchmark for understanding population levels of mental wellbeing in Coventry.

5.1 METHODS

5.1.2 Study setting

This study was conducted in the city of Coventry. A description of Coventry can be found in Chapter 2: Background.

5.1.3 Study design

The study design used was cross-sectional survey conducted annually over three years.

5.1.4 Ethical approval

Ethical approval was granted by the Caldicott Guardian Ethics Committee (the committee from which Coventry Partnership must get approval) in December of the preceding year for each survey. I was granted permission by the Coventry Partnership to access Coventry Household Survey (CHS) data from three years of surveys: 2010, 2011, and 2012 (Appendix 14).

5.1.5 Collection

For all three years, CHS data collection was conducted by face to face household interview using a stratified sampling design to achieve a representative sample of Coventry residents based on gender, age group, ethnicity and deprivation level. Data collection was undertaken by the research consultancy firm MEL (2010, 2012) and BMG (2011) both of which used interviewing teams of trained, multi-language interviewers.

Data were collected from December 2009 to February 2010; January to April 2011 and January to March 2012. In 2010 ‘paper and pencil’ were used (PAPI), in 2011 computer assisted personal interviewing (CAPI) was used and in 2012 a ‘paper and pencil’ were used again.

5.1.6 Measures

The CHS questionnaires included approximately 50 questions which were on the following subjects: socio-demographics, health and lifestyle, environment and surroundings, city satisfaction, WEMWBS. Surveys were completed on average in 25 to 30 minutes.

The dependent variable was the Warwick-Edinburgh Mental Well-being Scale (WEMWBS). It was incorporated into all three (2010, 2011 and 2012) Coventry Household Surveys (CHS).

WEMWBS is a 14-item measure designed to evaluate levels of mental well-being in adult (+16) populations (Tennant et. al., 2007). This scale has been validated in different adult (+16) and teenage (13+) populations across the UK including multicultural settings and covers an assessment period of two weeks (Tennant et. al., 2007; Clarke et. al., 2011). It is suitable for use at the population level and to measure change over time (Maheswaran, et. al., 2012) WEMWBS items address hedonic (positive affect) and eudaimonic (realising one’s full potential) aspects of

mental wellbeing (Tennant et. al., 2007). The aim of incorporating WEMWBS into CHS was to explore associations between demographic, lifestyle and geographical variables beyond those that are directly related to physical health.

WEMWBS is recommended as a self-completed scale, and during the interview, all respondents were given WEMWBS for self-completion on a separate sheet (in the case of CAPI, the computer is handed to the interviewee to self-complete). Factors considered potentially associated with mental wellbeing were identified in psychological, economic, social science, and health science literature. Factors from the literature search which were also included in the CHS questionnaire were then tested for correlations with WEMWBS. Not all known associated variables could be included in the surveys. Independent variables Variables included in each questionnaire are presented below in tables. Differences between survey variables by year are noted in Appendix 5.

5.2 STUDY SAMPLE

Households were sampled using a stratified sampling approach. The Royal Mail Postcode Address File (PAF) was used to obtain a full list of addresses in Coventry. This was linked to the Middle Super Output Areas (MOSAs). Three postcodes (one random and two numerically next-nearest) were sampled within each of the 42 MOSAs. Addresses of previous years' participants were excluded. This provided a total of 126 sampling points. The number of interviews in each sample point was calculated by dividing by the sample size for each year by sampling points.

The number of interviews in each sampling point ranged from approximately 17-30 interviews, achieved using the 'random walk' technique (Hoffmeyer-Zlotnik, 2003).

Approximately 200 surveys were conducted around Coventry city centre to capture mobile populations. Participants were selected for approach with the aim of obtaining a representative cross-section of Coventry residents. Interviewers asked to speak to the 'household member whose birthday is next'.

5.3 ANALYSIS

5.3.1 Data entry and processing

Data entry and coding were undertaken by two survey companies, (MEL in 2010 and 2012, and BMG in 2011). A 10% sample of each interviewer's batch of surveys was checked visually by that years' survey company representative, ensuring consistency and completeness. Double data entry verification was conducted on a 1% sample of completed questionnaires. Ten per cent (10%) of survey respondents were contacted for quality assurance (QA) purposes to verify that they had completed the survey. Unique identifiers were assigned to each questionnaire. Only the survey team were able to trace the unique identifiers to the respondent, meaning that at the point of data entry all answers were confidential and anonymous, meeting the requirements of the Data Protection Act legislation.

5.3.2 Statistical analyses

I undertook statistical analysis using SPSS 17 & 18. There were two phases of analysis.

First, for each of the three survey datasets, gender and age-adjusted associations between WEMWBS and the selected independent variables were examined using univariate analysis of variance (ANOVA). Gaussian linear models were then fitted to investigate associations between independent variables and WEMWBS scores.

Factors found to be significantly associated ($p \leq 0.05$) with WEMWBS scores in the univariate model were included in the multiple regression analysis. Forward stepwise regression using the adjusted R^2 criterion was applied for this purpose. The individual factor levels are reported in terms of regression coefficients (β) and confidence interval (CI) limits. Only completed records were included in the analyses. Variables were considered simultaneously in order to identify a set of factors which collectively explained the variation of WEMWBS scores best. These results are presented in tables 1 through 3 in Appendix 6. For more information on independent variables as they appear in the CHS, I have presented independent variables from the 2010 survey question and non-collapsed response options with frequencies in Appendix 6.1. The variables were collapsed in the same way for each year.

The second phase of analysis harmonised the findings of each dataset. The datasets were 'harmonised' by identifying independent variables a) associated with WEMWBS in the first phase of analysis and b) were common to all three survey datasets. These variables were included in one 'core' model applied to each individual dataset and stratified by gender. This gave a total of 6 identical models for men and women and for each survey year. Using regression coefficients (β) and 95% confidence intervals, I then examined the relative strength of each association between independent variables and WEMWBS across each year for men and women and discuss them.

Next I present the results of the second phase of analysis.

5.4 RESULTS

5.4.1 Descriptive statistics

A total of 9415 questionnaires were completed between 2009-2012. Of those, 8188 included valid WEMWBS scores. Survey characteristics for each survey year are presented in tables 6 and 7. Tables 6 illustrates the number of respondents per survey year and table 7 shows a comparison of CHS respondent characteristics with population projections (Coventry Partnership, 2010) and IMD scores (Nobel et. al., 2008) by year. Estimated response rates were 44%, 40% and an estimated 20 to 25% for 2010, 2011 and 2012 respectively.

Table 6: Number of respondents by survey year

Survey year	Approx. no. approached	Completed questionnaires	Response rate	Valid WEMWBS
2010 Survey	8500	3750	44% (2800 refusals)	3370
2011 Survey	9000	3548	40% (2415 refusals)	2707*
2012 Survey	Unknown, est. 9-10,000	2117	Unknown, est. 20-25%	2111

*valid WEMWBS less longitudinal component (404) and invalid and missing data (437)

Table 7: 2010 Comparison of sample and Coventry population characteristics

Characteristic	(%) 2010 Sample completing WEMWBS (n=3370)	(%) 2011 Sample completing WEMWBS (n=2707)	(%) 2012 Sample completing WEMWBS (n=2111)	(%) 09/10 Coventry (less people age 0-15) (n=255085) (Coventry Partnership and ONS, 2010)
Age				
16-64	79	84	80	82
65+	21	16	20	18
Ethnicity				
White	80	78	81	79
Mixed	1	1	1	2
Asian	11	14	11	12
Black	4	5	4	3

Chinese & other	3	3	3	3
Deprivation				
Quintile 1 (most deprived)	32	36	33	31
Quintile 2	25	26	29	28
Quintile 3	21	18	16	19
Quintile 4	15	13	16	15
Quintile 5 (least deprived	7	7	7	8

Each sample was representative of the population of Coventry on the basis of gender, ethnicity and the Index of Multiple Deprivation (IMD 2007) quintile which ranks the geographical proportion of seven individual-based deprivation domains: Income; employment; health and disability; education, skills and training; barriers to housing and services; living environment; crime (Noble et. al., 2008).

Tables 8 through 10 show participant characteristics clustered in demographic, health and lifestyle, and environment, neighbourhood and communities tables. The percentage of the total sample for each survey year is presented and these are rounded to the nearest whole number. The denominator used is the number of cases with valid WEMWBS.

Socio-demographics

The demographic table shows that the percentages of variables across survey years were similar. Age groups were fairly evenly distributed.

Table 8: Participant characteristics by survey year			
Year	**2010**	**2011**	**2012**
Demographic Variable	**Per cent of total sample (%) n=3370**	**Per cent of total sample (%) n= 2707**	**Per cent of total sample (%) n= 2111**
Total sample	100	100	100
Interview date			
Age Band			
16-24	19	18	17
25-34	17	20	18
35-44	16	18	18
45-54	14	16	14
55-64	13	13	14

65-79	16	11	13
80+	5	5	7
Gender			
Male	48	49	48
Female	52	51	52
Ethnicity			
White	80	78	81
Mixed	1	1	1
Asian	11	14	11
Black	4	5	4
Chinese & other	3	3	3
Marital status			
Single	32	35	31
Married/cohabiting	53	53	55
Separated/divo-rced/widowed	16	13	14
Deprivation			
Quintile 1 (most deprived)	32	36	33
Quintile 2	25	26	29
Quintile 3	21	18	16
Quintile 4	15	13	16
Quintile 5 (least deprived)	7	7	7
Education level			
No qualifications	33	29	26
Levels 1 and 2; other qualifications	33	34	39
Levels 3, 4 & 5	34	37	35
Employment status			
In work	44	53	48
Unemployed	12	9	11
Unpaid work	9	9	10
Retired	24	20	23
Student	11	9	9

Health & Lifestyle

In 2010 and 2012, three quarters of respondents reported their self-rated health as ‘good or very good (76%), with the largest proportion doing so in 2011 (82%). Those reporting any physical activity 5 times per week increased from 2011 to 2012 (31%

vs 39%), both were lower than the 2010 level of 42%. Those reporting never doing any physical activity was at its lowest rate in 2012, with 11% of the sample stating they never did any physical activity (this was 16% in 2010 and 2011). A significantly greater proportion of people were eating '5+ portions' of fruit and vegetables in 2012 (28%) than in 2011 (25%) (p=0.040), however this difference was not significant between 2012 and 2010 (27%) (p=0.67) or 2010 and 2011 (p=0.058). The proportion reporting good quality sleep in 2010 was 60%, in 2011 it was 54% and in 2012 it was 44%. The proportion of respondents reporting drinking alcohol over the recommended limit at least once per week (excluding non-drinkers) has decreased over time. In 2010, the proportion was 57%, in 2011 it was 56% and in 2012 the proportion decreased further to 50%.

Table 9: Health and lifestyle variables by survey year

Health and Lifestyle Variable	**Percentage of total sample 2010 (%)^**	**Percentage of total sample 2011(%)^**	**Percentage of total sample 2012 (%)^**
Self-rated health status			
Good	76	82	76
Fair	18	13	17
Poor	6	5	7
Disability			
No disability	82	87	77
Limited a little	10	7	14
Limited a lot	8	6	9
Quality of sleep (past month)			
Good	59	54	44
Average	28	33	42
Poor	12	13	15
Quantity of sleep (hours per night)			
Fewer than 6 hours	32	31	36
7-8 hours	59	57	57
9 hours or more	8	12	7
Daily fruit/ vegetable			
5+ portions	27	25	28
2 to 4 portions	62	62	64
1 or fewer portions	10	12	8
Physical activity: Any activity weekly			

5+ times per week	42	32	39
1-4 times per week	42	53	50
Never	16	16	11
Physical activity: Play sports weekly			
5+ times per week	5	6	7
1-4 times per week	28	36	35
Never	68	59	58
Smoking			
Yes, Currently	26	24	25
Yes, Former	9	9	13
No, Never	65	67	62
Alcohol consumption: Days/ week drink > daily recc. amount			
Never	43	42	50
1-3 days per week	49	53	46
4-7 days per week	8	5	4
Life satisfaction			
Dissatisfied	--	4	4
Satisfied	--	67	35
Very satisfied	--	30	61

Neighbourhoods & Communities

People were largely satisfied with their neighbourhoods and homes. In 2012 Ninety-two per cent (92%) of people were satisfied with the quality of their home, and 89% with their neighbourhood (compared with 86% in 2011 and 88% in 2010). Proportions reporting that crime was increasing in their neighbourhood fluctuated, with 24% reporting increases in 2010, 28% in 2011 and 23% in 2012.

Table 10: Neighbourhoods and communities variables by survey year			
Communities Variable	**Percentage of total sample 2010 n=3370 (%)^**	**Percentage of total sample 2011 n=2707 (%)^**	**Percentage of total sample 2012 n=2111 (%)^**
Neighbourhood satisfaction:			
Satisfied	87	86	89
Neither satisfied nor dissatisfied	5	7	5
Dissatisfied	7	7	6
Satisfaction with quality of home:			

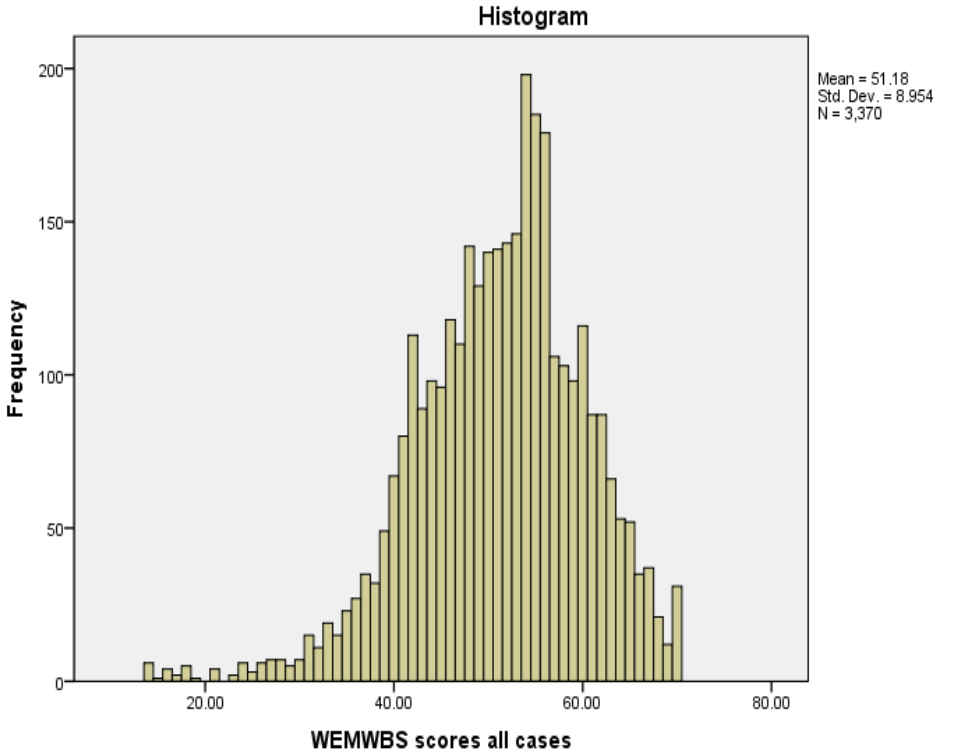
Satisfied	90	91	92
Neither satisfied nor dissatisfied	4	5	3
Dissatisfied	6	4	5
Night-time neighbourhood safety:			
Feel safe	74	79	80
Feel unsafe	26	21	20
Feel that crime has increased in neighbourhood in past year			
Agree	24	29	23
Neither agree nor disagree	44	26	18
Disagree	32	34	42
No opinion	--	12	17

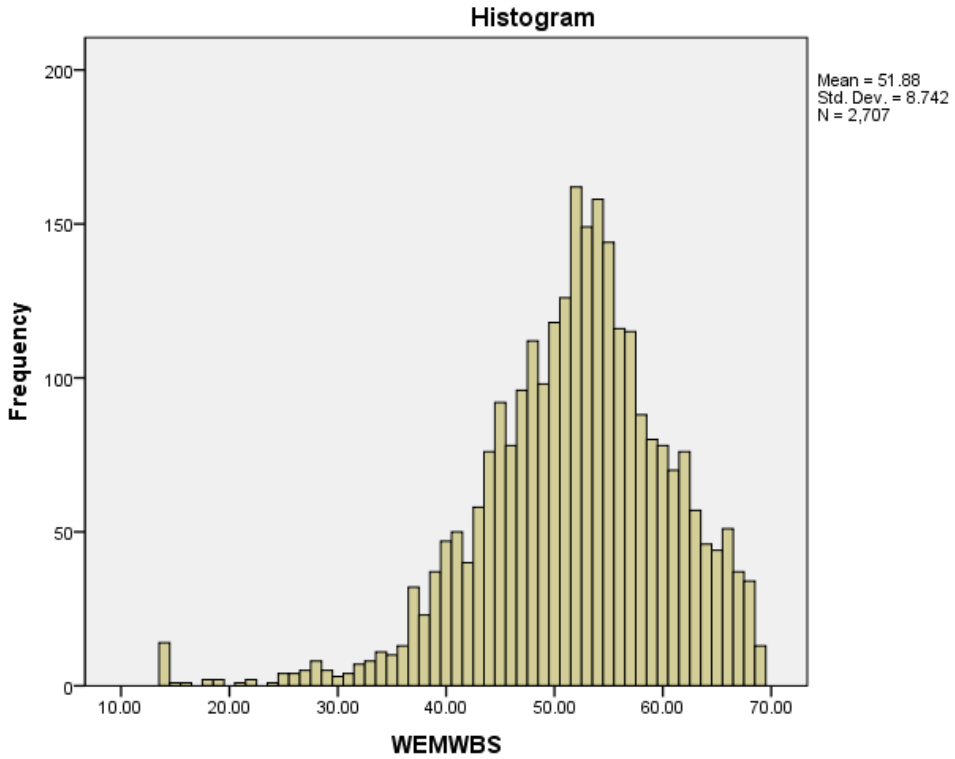
*rounded to the nearest percent

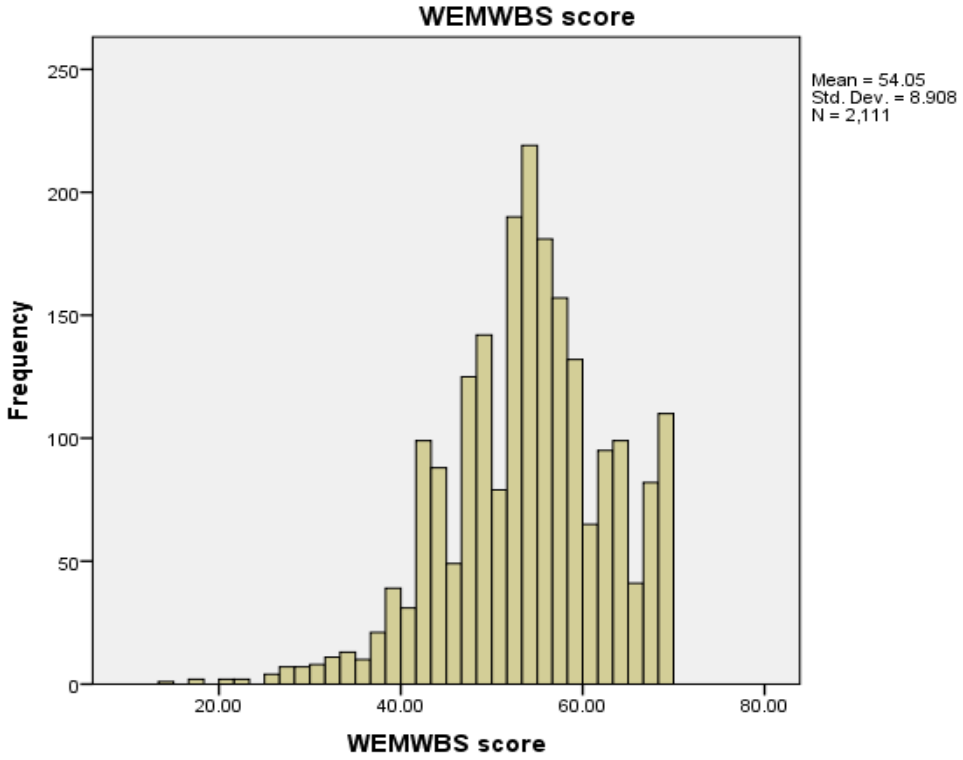
5.4.2 Distribution of mental wellbeing scores

In 2010, the distribution of WEMWBS scores was characterised by a normal kurtosis and slight negative skew, consistent with previous findings examining the spread of WEMWBS in general populations (Tennant et. al., 2007). In 2010 and 2011 overall mean WEMWBS scores were not significantly different. The mean WEMWBS score in 2012 was significantly higher than for 2010 or 2011. Mean WEMWBS score for men was consistently higher than for women over all three years, therefore analyses were stratified by gender.

Figure 13: WEMWBS distributions for 2010, 2011, 2012 CHS







5.4.3 Univariate analysis of WEMWBS

For all three years, WEMWBS scores were associated with the following variables in the univariate analysis of variance (ANOVA) after adjusting for age and gender: educational qualifications, economic status, housing tenure, marital status, self-rated health, limiting long-standing illness or disability, 2007 IMD level of deprivation, sleep quality in the past month, sleep quantity, smoking, daily fruit and vegetable consumption, moderate weekly physical activity, vigorous weekly physical activity, housing tenure, neighbourhood satisfaction, home quality satisfaction, night-time neighbourhood safety, perception of crime: level of agreement that neighbourhood crime has increased in past 12 months (variable values are described in Appendix 6.1).

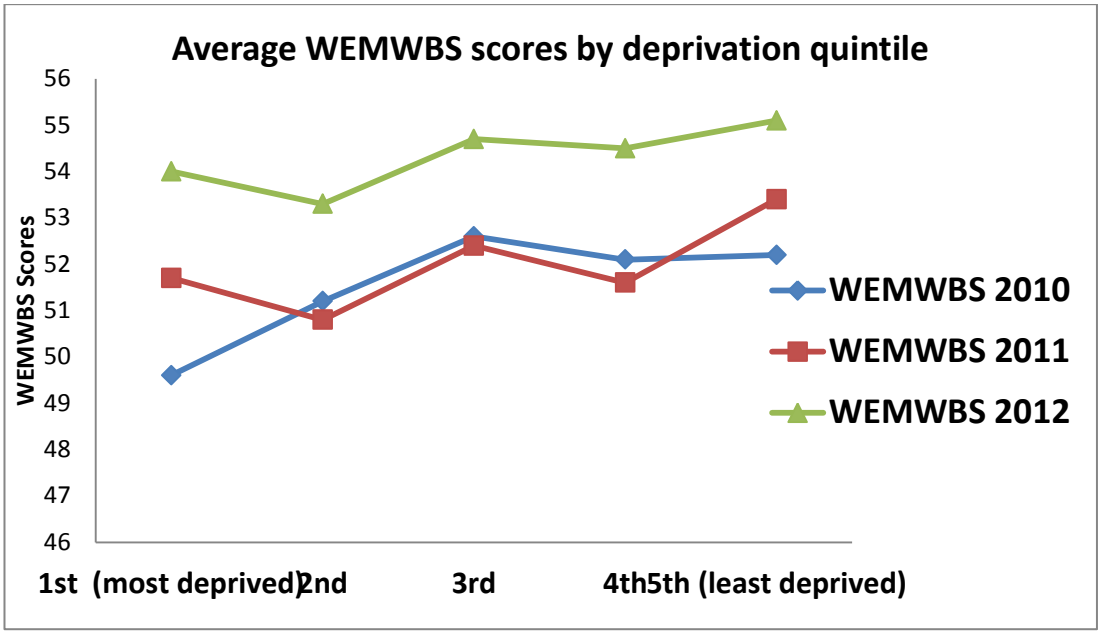
The Independent variables 'ethnicity' and alcohol' were not associated with WEMWBS in 2011 and 2012. These two variables were significantly associated with WEMWBS in the 2010 univariate ANOVA.

Correlations were identified among mental wellbeing and independent variables. The correlation coefficient did not exceed (.3) for all but one of the above variables, suggesting they were not strongly correlated. Self-rated health (SRH) was more strongly correlated with mental wellbeing than the other variables and I tested for multicolinearity. The variance inflation factor (VIF) exceeded 1.0 and the tolerance was 0.32 (where less than 0.2 to 0.1 suggests bias) suggesting it might bias the model. SRH was therefore removed from the multiple linear regression analysis.

IMD deprivation score is a composite measure which includes geographical area-level measures of education, employment and others (Nobel et. al., 2008). Due to the univariate significant association with mental wellbeing I examined the pairwise associations between WEMWBS and deprivation quintile. I found that the association between deprivation and mental wellbeing appeared non-linear consistently across each survey year. The patterns in estimated marginal means differed slightly between 2010 and the following years, with 2011 and 2012 patterns graphically similar (Figure 14).

The graph shows that in 2010, the mean WEMWBS scores of the third, fourth and fifth quintiles of deprivation did not significantly differ from each other. WEMWBS scores 'peak' in the 3rd quintile, and 'plateau' in the two least deprived categories. While the most deprived category is significantly different than the least deprived, the trend is not linear between the most and least deprived quintiles.

Figure 14: Average WEMWBS scores by Deprivation Quintile



In 2011 the non-linear trend is more pronounced. The most deprived quintile does not significantly differ from any other quintile, with the second quintile showing the lowest mean WEMWBS scores, significantly lower than the 3rd and 5th quintile. The 2012 survey results demonstrate the same trend as the 2011 survey however the pairwise comparisons were not statistically significant.

All three survey years suggest a lack of linear relationship between mental wellbeing and geographical IMD deprivation quintile.

I did not include IMD score quintiles in the multiple regression and instead included individual-level measures of education and employment.

5.4.4 Multiple linear regression analysis

I report here the harmonised 3-year multiple linear regression results. Datasets were 'harmonised' by identifying independent variables a) associated with WEMWBS in the first phase of analysis and b) were common to all three survey datasets. Variables were considered simultaneously in order to identify a set of factors which collectively explained the variation of WEMWBS scores best.

In Table 11, each column represents the results of the core model applied to each year of survey data. The data are presented for each year stratified by gender. Beta coefficients (β) are presented with 95% confidence intervals. To illustrate patterns, statistically significant associations are in bold and shaded.

Table11 highlights identified patterns form selected variables and illustrates the strength of associations between the selected independent variable and WEMWBS scores (using β coefficients and 95% Confidence limits). This is followed by the description of results according to each 'cluster' of independent variables analysed: 'Socio-demographics', 'Health & Lifestyle', and Neighbourhoods & Communities'.

Table 11: Associations with mental wellbeing by gender and year (β coefficients (95% CI))						
Gender	**Men**			**Women**		
Dataset Year	**2010**	**2011**	**2012**	**2010**	**2011**	**2012**
Variable						
SOCIO-DEMOGRAPHICS						
Age band						
16-24	0.77 (-1.76, 3.30)	2.56 (-0.33, 5.46)	**3.15 (0.17, 6.13)**	2.44 (-0.42, 5.30)	**3.44 (0.37, 6.52)**	1.98 (-1.29, 5.26)
25-34	0.76 (-1.44, 2.96)	1.48 (-0.87, 3.83)	**2.64 (0.03, 5.26)**	0.23 (-2.21, 2.67)	2.07 (-0.40, 4.53)	2.59 (-0.28, 5.45)
35-44	0.62 (-1.43, 2.68)	-0.63 (-2.91, 1.65)	2.40 (-0.06, 4.86)	0.44 (-1.77, 2.65)	1.67 (-0.66, 4.00)	-0.06 (-2.71, 2.59)
45-54(REFERENCE)	reference	reference	reference	reference	reference	reference
55-64	0.41 (-1.83, 2.64	1.59 (-1.51, 4.68)	1.23 (-1.20, 3.67)	0.94 (-1.57, 3.45)	1.01 (-2.32, 4.34)	2.02 (-0.91, 4.95)
65-74 (65-79)	**2.66 (0.64, 5.26)**	2.64 (-0.78, 6.05)	0.57 (-2.50, 3.63)	**4.32 (1.34, 7.30)**	2.20 (-1.72, 6.12)	1.67 (-2.20, 5.54)
75+ (80+)	**4.99 (0.93, 9.06)**	1.28 (-3.17, 5.75)	-1.10 (-5.12, 2.90)	0.50 (-4.63, 5.63)	-0.74 (-6.01, 4.53)	4.30 (-0.47, 9.07)
Limiting long-standing illness						
Yes v No	1.34 (-0.51, 3.18)	**3.50 (0.89, 6.12)**	**2.94 (1.05, 4.83)**	**3.05 (0.91, 5.19)**	0.85 (-2.22, 3.92)	**3.47 (1.06, 5.89)**
Education						
No qualifications v low qualifications	0.35 (-1.29, 1.98)	0.96 (-1.01, 2.93)	0.32 (-1.52, 2.17)	1.41 (-0.54, 3.35)	0.52 (-1.82, 2.85)	0.17 (-2.23, 2.56)
No qualifications v high qualifications	0.55 (-1.16, 2.26)	0.69 (-1.33, 2.70)	-0.02 (-2.03, 2.00)	**3.40 (1.34, 5.45)**	1.08 (-1.37, 3.52)	1.30 9-1.33, 3.92)
Employment						
In work v economically inactive	-0.77 (-2.53, 0.99)	-0.86 (-3.24, 1.51)	-0.10 (-2.21, 2.01)	-0.39 (-2.09, 1.31)	-0.32 (-2.37, 1.73)	0.17 (-1.81, 2.16)
In work v unemployed	**-2.94 (-4.95, -0.92)**	-0.86 (-3.74, 2.02)	-1.95 (-4.54, 0.64)	**-3.39 (-6.27, -0.51)**	**-3.78 (-7.26, -0.29)**	-0.48 (-4.20, 3.24)
Ethnicity						
(white vs mixed)	-1.72 (-12.47, 9.0)	4.26 (-5.02, 13.53)	3.39 (-2.33, 9.10)	-2.58 (-8.34, 3.19)	5.72 (-10.10, 21.55)	0.20 (-11.60, 12.00)
(white vs Asian)	0.73 (-1.45, 2.92)	0.52 (-2.15, 3.20)	0.80 (-1.76, 3.37)	-1.21 (-5.20, 2.79)	-1.33 (-5.00, 2.32)	-1.70 (-6.24, 2.85)
(white vs Black)	3.79 (0.78, 6.81)	-0.21 (-.14, 3.71)	2.83 (-1.25, 6.90)	2.61 (-2.41, 7.63)	-1.62 (-8.15, 4.90)	1.51 (-4.44, 7.45)
(white vs Chinese & other)	1.45 (-2.95, 5.85)	0.-31 (-4.58, 4.00)	-3.86, -10.03, 2.31)	-1.13 (-8.39, 6.12)	3.54 (-3.60, 10.68)	-5.27 (-14.73, 4.19)
Relationship status						
Single v married/cohabiting	1.03 (-0.63, 2.69)	0.92 (-0.87, 2.70)	**2.13 (0.32, 3.9)**	0.37 (-1.60, 2.33)	0.28 (-1.67, 2.24)	**2.31 (0.19, 4.42)**
Single v separated, divorced or widowed	-0.92 (-3.43, 1.59)	0.80 (-2.28, 3.88)	2.26 (-0.57, 5.11)	0.87 (-1.85, 3.58)	-0.51 (-3.21, 2.20)	2.04 (-0.91, 4.98)
HEALTH & LIFESTYLE						
Sleep quality						
Poor v average	**4.18 (2.05, 6.32)**	**4.16 (1.66, 6.65)**	**4.95 (2.64, 7.27)**	**4.44 (2.23, 6.65)**	1.86 (-0.47, 4.18)	**4.32 (1.83, 6.81)**
Poor v good	**6.71 (4.68, 8.75)**	**4.52 (2.12, 6.92)**	**6.29 (4.01, 8.57)**	**6.21 (4.13, 8.28)**	**3.20 (0.89, 5.52)**	**5.90 (3.46, 8.34)**
Sleep Quantity						
7-8 hrs per night v 0-6	0.35 (-1.05, 1.76)	-0.68 (-2.46, 1.10)	0.88 (-0.78, 2.54)	-1.21 (-2.87, 0.44)	-1.21 (-3.17, 0.75)	-1.55 (-3.62, 0.52)
7-8 hrs per night v 9+	-0.65 (-2.83, 1.53)	0.54 (-1.95, 3.04)	2.62 (-0.01, 5.25)	-1.07 (-3.60, 1.46)	-1.25 (-3.88, 1.38)	-0.03 (-3.92, 3.87)
Fruit and vegetable consumption						
5+ v 2 to 4 portions daily	**-2.07 (-3.43, -0.72)**	-0.40 (-2.08, 1.27)	-0.74 (-2.33, 0.85)	-0.88 (-2.42, 0.66)	-1.51 (-3.20, 1.17)	**-2.61 (-4.41, -0.81)**

5+ v 1 or fewer portions daily	-1.13 (-3.39, 1.14)	-1.53 (-4.19, 1.14)	-2.41 (-5.31, 0.49)	**-3.36 (-6.00, -0.73)**	**-3.79 (-6.70, -0.88)**	-1.00 (-4.85, 2.86)
Physical Activity, Any						
5+ v 1 to 4 times per week	-0.61 (-1.89, 0.67)	**-1.74 (-3.40, -0.08)**	**-2.29 (-3.86, -0.72)**	-0.30 (-1.74, 1.14)	-1.50 (-3.15, 0.15)	-0.61 (-2.31, 1.09)
5+ v never per week	**2.16 (0.42, 3.90)**	**-3.97 (-6.55, -1.39)**	**-2.34 (-4.62, -0.06)**	0.12 (-2.31, 2.55)	**-3.72 (-6.59, -0.85)**	**-4.05 (-7.27, -0.83)**
Physical Activity, Play Sports						
5+ v 1 to 4 times per week	-1.36 (-3.76, 1.05)	-1.07 (-4.04, 1.90)	1.80 (-0.95, 4.55)	0.97 (-2.45, 4.38)	-0.92 (-5.37, 3.53)	-1.38 (-5.07, 2.30)
5+ v never per week	**-2.52 (-5.04, -.01)**	-0.19 (-3.19, 2.81)	1.58 (-1.21, 4.38)	1.13 (-2.22, 4.48)	0.70 (-3.72, 5.12)	-2.18 (-5.83, 1.46)
Smoking						
Never smoked v currently	-0.28 (-1.72, 1.15)	0.39 (-1.32, 2.10)	-1.23 (-2.98, 0.52)	-1.03 (-2.71, 0.64)	0.16 (-1.76, 2.08)	-0.38 (-2.36, 1.61)
Never smoked v no longer	1.72 (-0.08, 3.53)	-0.77 (-3.03, 1.49)	-0.91 (-2.77, 0.95)	0.38 (-1.75, 2.52)	-0.84 (-3.30, 1.62)	-0.53 (-2.92, 1.86)
Alcohol Days per week drinking over the recc'd limit						
Never v over limit 4-7 days	1.51 (-0.77, 3.79)	**-2.94 (-5.72, -0.16)**	-1.15 (-4.15, 1.84)	**-3.37 (-6.60, -0.14)**	-0.70 (-5.62, 4.23)	-0.48 (-6.01, 5.05)
Never v over limit 1-3 days	**1.69 (0.44, 2.94)**	-0.07 (-1.60, 1.49)	0.63 (-0.79, 2.05)	-0.36 (-1.80, 1.08)	-0.14 (-1.68, 1.41)	0.48 (-1.21, 2.17)
NEIGHBOURHOODS & COMMUNITIES						
Home satisfaction						
Satisfied v dissatisfied	**-3.62 (-6.51, -0.74)**	-0.41 (-4.91, 4.09)	-3.30 (-7.34, 0.75)	-0.62 (-3.60, 2.36)	-3.26 (-6.99, 0.47)	-1.68 (-5.59, 2.24)
Satisfied v neither satisfied nor dissatisfied	-1.88 (-4.75, 0.99)	0.45 (-3.42, 4.32)	-0.49 (-4.53, 3.54)	1.31 (-2.03, 4.65)	-1.53 (-5.40, 2.35)	-3.83 (-8.71, 1.04)
Night-time neighbourhood safety						
Feeling safe v unsafe	-0.06 (-1.72, 1.60)	**-2.29 (-4.35, -0.22)**	-0.76 (-2.90, 1.37)	**-1.97 (-3.59, -0.35)**	-0.17 (-2.19, 1.85)	-0.87 (-2.94, 1.21)
Crime increase in the past year						
Disagree v agree	0.40 (-1.16,1.95)	**-2.32 (-4.10, -0.56)**	-0.55 (-2.32, 1.22)	1.05 (-0.76, 2.85)	-1.32 (-3.29, 0.64)	-1.08 (-3.24, 1.07)
Disagree v neither or no opinion	0.67 (-0.62, 1.96)	-1.19 (-2.85, 0.47)	0.60 (-0.98, 2.19)	0.82 (-0.80, 2.44)	-0.68 (-2.53, 1.17)	0.58 (-1.35, 2.51)
Neighbourhood satisfaction						
Satisfied v dissatisfied	-1.67 (-4.09, 0.76)	2.18 (-1.42, 5.78)	0.42 (-3.02, 3.87)	-0.48 (-3.35, 2.39)	2.24 (-0.98, 5.47)	-2.44 (-6.27, 1.40)
Satisfied v neither satisfied nor dissatisfied	-0.68 (-3.29, 1.92)	0.16 (-2.70, 3.01)	-1.41 (-5.13, 2.30)	-1.49 (-4.61, 1.62)	-2.12 (-5.31, 1.07)	0.59 (-5.12, 6.30)
Housing tenure						
Owner-occupied v rented	0.09 (-1.36, 1.55)	-0.37 (-2.19, 1.45	-0.06 (-1.90, 1.77)	-0.10 (-1.86, 1.67)	-0.45 (-2.35, 1.44)	1.40 (-0.72, 3.53)
Influence decisions						
Agree v disagree	-.01 (-1.24, 1.22)	-1.30 (-2.72, 0.12)	-0.70 (-2.10, 0.71)	-0.53 (-1.96, 0.91)	0.58 (-1.03, 2.18)	-1.50 (-3.18, 0.19)
Diverse backgrounds get on well together						
Agree v disagree	**-4.27 (-6.56, -1.97)**	2.77 (-0.29, 5.58)	-0.76 (-4.12, 2.60)	-1.02 (-3.64, 1.60)	-2.37 (-5.39, 0.65)	1.51 (-2.28, 5.29)

5.4.4.1 Socio-demographics

Among men and women, ‘younger’ (16-24) and ‘older’ (65-74) age groups were associated with higher levels of mental wellbeing than those aged 45-54, the reference group. Significant associations were not consistent for men or women, or across years.

For both men and women, not having a limiting long-standing illness was significantly associated with higher levels of mental wellbeing in two out of three survey years. These years were different for men (2011 and 2012) and women (2010 and 2012).

The variable ‘education’ was not associated with higher or lower levels of mental wellbeing among men. Among women in 2010, those with high qualifications had significantly higher levels of mental wellbeing compared to those with no qualifications, however this finding was not significant in 2011 or 2012. Looking at employment, being unemployed was associated with lower levels of mental wellbeing among both men (2010) and women (2010 and 2011).

Ethnicity was not significantly associated with mental wellbeing across years or gender in the multiple linear regression analysis.

Being married or living with a partner (versus being single) was significantly associated with higher levels of mental wellbeing in 2012 only, for both men $\beta=2.13$ (0.32, 3.9) and women $\beta=2.31$ (0.19, 4.42).

5.4.4.2 Health & Lifestyle

Sleep quality

In each survey year, reporting a good or average quality of sleep in the past month compared to poor sleep quality was strongly associated with higher levels of mental wellbeing, and good sleep quality was the most strongly related to mental wellbeing relative to all other IVs measured in these surveys. Sleep quantity did not demonstrate any clear associations with mental wellbeing levels.

For men, β coefficients for average sleep quality ranged from 4.16, (95%CI 1.66, 6.65) in 2011 to 4.95 (2.64, 7.27) in 2012. The stronger association between mental wellbeing and good sleep quality was lowest in 2011, with β = 4.52 (, 2.12, 6.92) and highest in 2010, β = 6.71 (, 4.68, 8.75).

For women, the strength of the association was lower on average than among men. In 2011, the association between average sleep quality and mental wellbeing did not meet statistical significance β = 1.86 (-0.47, 4.18), the only point at which sleep quality was not found to be significantly associated with mental wellbeing. However in 2010 and 2012 good sleep quality was the most strongly associated with mental wellbeing, with 2010 demonstrating the strongest association coefficient β = 6.21 (4.13, 8.28).

Fruit and vegetables consumption

The amount of fruit and vegetables consumed on a daily basis was significantly associated with mental wellbeing for men and women in at least one survey year.

For men, eating fewer than 5 portions of fruit and vegetables daily compared to eating five or more portions demonstrated an association with slightly lower mental wellbeing levels, but this only reached statistical significance in 2010. In 2011 and

2012, men were just as likely to have higher or lower levels of mental wellbeing depending on their fruit and vegetable consumption.

For women, eating fewer than 5 portions of fruit and vegetables (either '2 to 4 portions' or 'less than 1 portion') compared to eating 5 or more portions was associated with lower levels of mental wellbeing in all three years.

Physical activity

Reporting any physical activity 5 times per week ('frequent') was associated with significantly higher levels of mental wellbeing compared to those active 1 to 4 times per week ('moderate') and those never active ('never'). There were differences between men and women.

Among men, being physically active in any way fewer than 5 times per week was associated with lower levels of mental wellbeing in 2011 and 2012. In 2010, never doing any physical activity was associated with significantly *higher* levels of mental wellbeing than frequently being physically active 5+ times per week $\beta = 2.16$ (0.42, 3.90). The association between being less physically active and having lower mental wellbeing was stronger among men than women.

Among women, the association between never doing physical activity and frequent physical activity (5+ times per week) was significant in 2011 β=-3.72 (-6.59, -0.85) and 2012 β=-4.05 (-7.27, -0.83). There were no significant associations between these variables in 2010, or when examining 'moderate' physical activity relative to frequent physical activity for any survey year.

Alcohol and smoking

Alcohol and smoking were inconsistently associated with mental wellbeing across the survey years. For both men and women, smoked currently or formerly

compared to never having smoked showed no association with mental wellbeing levels.

Examining alcohol, comparing ‘never drinking alcohol over the daily recommended limit’ to drinking over the limit either ‘1 to 3 days per week’ or ‘4 to 7 days per week’ showed no consistent associations. Among men in 2010, there was a positive relationship between drinking over the limit 1-3 days per week and higher mental wellbeing levels. This association was not replicated in 2011 or 2012 or for women. For women, only one association reached statistical significance, comparing women who never drank over the limit to those drinking over the limit 4-7 days per week. This comparison showed lower levels of mental wellbeing β =-3.37 (-6.60, -0.14) among those frequently drinking over the limit.

5.4.4.3 Neighbourhoods & Communities

The independent variables ‘neighbourhood satisfaction’ and ‘housing tenure’ did not demonstrate any significant associations with mental wellbeing for men or women across survey years. The model for men showed associations between neighbourhood and community variables and mental wellbeing more often than for women.

Among men in 2010, there was a significant association between being dissatisfied with the ‘quality of your home’ (versus satisfied) and lower levels of mental wellbeing, but not in 2011 or 2012. In 2011 there was a positive association between lower mental wellbeing levels and feeling safe in one’s neighbourhood at night β=-2.29 (-4.35,-0.22), and agreeing that crime had increased in the neighbourhood in the past 12 months.

Among women, of the 7 independent variables related to neighbourhoods and communities, only one variable – feeling safe at night- was found significantly associated with mental wellbeing β=-1.97 (-3.59,-0.35).

5.5 CHAPTER DISCUSSION

This discussion addresses the findings illustrated above.

5.5.1 Coventry's population

The samples for these surveys were representative of Coventry based on age and gender, deprivation quintile and ethnicity at the time they were collected. WEMWBS scores were comparable with those reported from Scotland, Nottingham and in England overall with the exception of the 2012 Coventry survey where scores were significantly higher (Tennant et. al., 2007; Davidson, Sewel, Tse, O'Connor, 2009; Nottingham Health & Wellbeing Board Report, 2012).

However response rates were low and I discuss this later in section 5.5.3.

5.5.2 Factors associated with mental wellbeing

In the present study I examined the associations between socio-demographic health, lifestyle, and neighbourhood variables and mental wellbeing in three cross-sectional surveys. I used multiple linear regression to conduct the analysis. I found that of the variables tested, health and lifestyle variables showed the strongest and most consistent patterns of association with levels of mental wellbeing measured using WEMWBS.

I expected variables reported in the literature as associated with positive mental health or wellbeing would also be associated with mental wellbeing in this study (see chapter 3). In the univariate analysis (ANOVA) I found this expectation met: most variables tested were significantly associated with mental wellbeing after

adjusting for age group and gender across survey years, with the exception of alcohol and ethnicity (univariate associations in 2010 only).

In the following sections I will discuss the results of the multiple linear regression analysis.

5.5.2.1 Socio-demographics

Looking at the differences between men and women overall, there were fewer significant associations between independent socio-demographic variables and mental wellbeing for women than for men. This may suggest that there are other variables that are more strongly related to the mental wellbeing of women, and were simply not measured here.

I observed a 'U' shaped trend in both men and women based on age. The lowest mean WEMWBS scores based on age occurred earlier for women (35-44) than men (45-54) replicating the finding demonstrated in Blanchflower and Oswald's research among a US population (2008). Interestingly, Blanchflower and Oswald did not observe this gender differential in their European data analysis, and showed instead that European men and women both reach their nadir around their forties. A recent contribution to this debate comes from Fritjers & Beatton (2012) who offer a similar but less pronounced 'U' shape, when examining life satisfaction by age using European panel study data. The findings from this study appear to mirror their trend of higher life satisfaction in 'retirement age' individuals, with a sharp decrease in life satisfaction around age 75.

Higher levels of educational attainment and being in employment both showed associations with higher levels of mental wellbeing in the age-adjusted univariate analysis. However in the multiple regression any effect of education was attenuated by other independent variables. Educational attainment was not significantly associated with mental wellbeing for men in any survey year, and for women only in

2010 did the association reach statistical significance. Yet education has been a long standing marker of similar measures such as life satisfaction, particularly for men, (Larson, 1978, Diener, et.al. 1992, Pinquart, & Sörensen, 2000), and also health (Marmot, Atkinson, & Bell 2010). It is likely that differences between historical findings and the present study may be related to different measures of wellbeing or varying inclusion of other variables which may mediate or moderate the relationship between education and life satisfaction.

Employment was similarly not as consistently associated with mental wellbeing as expected, given previous research (Diener et. al., 1993). One hypothesis which might explain this finding is that relative employment status is important and that there is a 'social norming' effect influencing mental wellbeing in those are unemployed but living amongst their unemployed peers (Clark, 2003). However, Shields, Wheatley Price, and Wooden (2009) tested for the effect of social norming on unemployment and found this norming effect for men, but not among women. The reason for this finding remains unclear. Further, it is possible that social norming theory may explain the 'education effect' on the mental wellbeing of men.

I expected ethnicity to be associated with lower levels of mental wellbeing. This has been demonstrated in other wellbeing literature from the UK (Saamah, 2012) and would reflect the mental health and illness literature, where black and ethnic minority individuals are reported to have e.g. higher admission rates to in-patient psychiatric services (Bhui et. al., 2003) greater prevalence of anxiety and depression (Weich et.al, 2004) and poorer experiences of mental health services overall (Morgan, et. al., 2005; Keating et. al., 2002). I found that ethnicity was not consistently associated with mental wellbeing and there was no association after adjusting for other factors. However, a study investigating the interactions between immigration, identity and psychological wellbeing suggested that potential negative effects of ethnicity may be better understood in relation to the environment in which

ethnic minorities are received, the prevailing attitudes of the host population, and political discourse and policies related to immigration and levels of real or perceived hostility (Phinney, et. al., 2001). More recent work by Weich, Griffith and colleagues looked at peoples experiences of different types of mental health services in relation to their ethnicity. They found that there were fewer negative ethnicity related experiences within community level mental health services than in in-patient psychiatric services (Weich, Griffith, Commander, Bradby et. al., 2012). This supports the notion that within community contexts and settings, ethnicity may have less to do with poor mental health than previously thought.

5.5.2.2 Health & Lifestyle

Overall, health and lifestyle variables showed the strongest and most consistent associations with levels of mental wellbeing in Coventry. Mental wellbeing was most strongly related to sleep quality, physical activity and fruit and vegetable consumption. Alcohol and smoking were not largely related to higher or lower levels of mental wellbeing.

Sleep

Good sleep quality demonstrated the strongest association with higher mental wellbeing levels for men and women. This association was consistent across survey year and gender. This is in contrast to sleep quantity which showed no association with mental wellbeing in the multiple regression, a finding reflected in other studies (Pilcher, Ginter, & Sadowsky, 1997; Jean-Louis et. al., 2000).

The finding that good sleep quality and higher mental wellbeing are strongly related is echoed in similar population studies. Haseli-Mashhadi and colleagues (2009), found that good sleep quality was associated with higher self-rated health and lower levels of depression; Baker similarly found that poor sleep quality was associated with poorer health and psychological distress in a survey of American women

(Baker et. al. 2009) (although mental wellbeing was not measured in this study). In another study, sleep quality among university students was explained in part by stress and anxiety, but exercise, alcohol, consistent sleep schedule were not predictors as one might expect (Lund et. al., 2010). Rowshan-Ravan and colleagues found associations between poorer sleep and psychosocial stressors and lower levels of economic and family satisfaction (2010). As in Lund et. al. 2010, they did not find an association between alcohol use and sleep problems.

Another key aspect in the relationship between sleep quality and mental wellbeing is whether poor sleep is a manifestation of or a cause of low mental wellbeing. Most evidence in the literature measures poor mental health, but does provide some indication of the negative relationship expected between sleep and wellbeing. For example, one study followed 1053 university graduate men for 44 years, excluding women and individuals with a history of depression from the study (Chang et. al., 1997). After adjusting for relevant covariates (parental history of depression, temperament and other variables), the authors found that men who reported having insomnia were the most likely to develop clinical depression later in life (RR 1.4-3.6, $P<0.001$), followed closely by those reporting difficulty sleeping under stress (RR 1.3-2.8, $P<0.01$), and poor sleep quality (RR 1.1-3.3, $P<0.05$). These findings are limited to a homogenous population of educated white men, but suggest that inability to sleep in general and difficulty sleeping under stress may contribute to the development of depression (Chang et. al., 1997). More recent findings suggest a similar trend. Barber, Rupprecht, & Munz (2013) measured sleep quality, perceived threats/stressors and mental wellbeing to determine directionality between good sleep and higher mental wellbeing and found that this relationship was mediated by people's perceptions of control over life stressors. The authors contend that better sleep hygiene could result in higher mental wellbeing by increasing perceived control over stressors (Barber, Rupprecht, & Munz 2013).

There is some evidence to suggest that the relationship between mental wellbeing and sleep quality relates to different aspects of mental wellbeing. Steptoe and colleagues found that having higher levels of both eudaimonic and hedonic aspects of mental wellbeing attenuated the effect of social and psychological stressors on sleep, but only eudaimonic wellbeing was associated with good sleep after adjusting for other relevant factors (Steptoe et. al., 2008). This finding suggests that some aspects of mental wellbeing may matter more for good sleep than others.

The finding that sleep quality is the strongest and most consistently related factor associated with mental wellbeing in this study reflects previous research. It is supported by past and recent research suggesting that sleep problems, possibly affecting coping abilities, affect mental wellbeing.

Fruit and Vegetable Consumption

Eating fewer than 5 daily portions of fruit and vegetables (F&V) was associated with lower levels of mental wellbeing among all of the samples observed in this study. If there is a causal association between fruit and vegetable consumption and mental wellbeing, it may be a short term effect – related perhaps to water soluble vitamins (Blanchflower, Oswald, Stewart-Brown, 2012). Establishing causality in this situation may be methodologically challenging as the effect may not be present in longitudinal studies or the association may be bi-directional.

However there is some evidence supporting this association. Lim & Taylor found independent associations between physical activity and F&V among older adult populations (Lim, Taylor, 2004). Jacka and colleagues (2012) studied the association between nutrient levels and depression and anxiety in women and found that women with clinical depression had significantly lower levels of zinc, folate, and magnesium (supplemental or naturally occurring in F&V) than women who did not have clinical depression. Interestingly, they found no relationship

between anxiety and nutrient levels, opening up new research questions regarding interactions between anxiety and depression, nutrients, and mental wellbeing. While the present study and the above research cannot determine the direction of causality, research from White, Horwath, and Conner (2013) provide some evidence of the directionality of this relationship. The authors used diet diaries to record fruit and vegetable intake and positive and negative affect among a sample of healthy young adults for 21 days (n=281). They found that fruit and vegetable consumption predicted increased positive affect levels, but increased positive affect levels did not predict increased fruit and vegetable consumption, suggesting that F&V consumption improved positive affect (an important aspect of mental wellbeing).

In this study, the positive relation between higher mental wellbeing and greater fruit and vegetable consumption was stronger among women than men. Women more consistently demonstrated associations between consuming more fruit and vegetables and higher levels of mental wellbeing. This suggests certain health behaviours may be mediated by gender.

Gender differences in fruit and vegetable consumption have been observed in other populations, for example, Myint and colleagues (2007) found differential correlations between good mental health and fruit and vegetable consumption between men and women (using the SF-36). While Myint found strong associations between physical health and F&V, they found less consistent findings after adjusting for confounders when looking at mental health, however the trend was stronger among women. This supports the finding from this study that fruit and vegetable consumption may affect men and women differently. It is also possible that differential gender effects are related to women eating larger amounts of F&V, or there may be gender based reporting bias. Nevertheless, women more consistently demonstrate positive and significant associations between reporting consuming more fruit and vegetables and higher levels of mental wellbeing.

The gender differences found in associations between fruit consumption and mental wellbeing warrant further investigation as there could be multiple causal pathways explaining the relationship between these two variables that could be important for public health action.

Physical Activity

Physical activity was less frequently statistically significantly correlated than good or average sleep quality, but showed stronger associations with mental wellbeing than most other variables tested in this analysis. Men more consistently demonstrated positive associations between frequent physical activity of any kind and higher mental wellbeing levels than women. This contrasts with the other physical activity variable 'play sports' which did not demonstrate a clear trend for men or women, suggesting the relationship between mental wellbeing and physical activity might occur via frequency rather than intensity.

It was surprising to find a lack of association between physical activity and mental wellbeing in the 2010 results, given the well documented association between mental health and wellbeing and physical activity (Fox,2000, Penedo & Dahn, 2005). However, evidence from Hamer, Stamatakis, and Mishra (2010) raise an important question–is there a difference between the presence of physical activity and the absence of sedentary behaviour? They suggest that it is a lack of sedentary behaviour that is more beneficial to mental wellbeing than the 'dosage' of physical activity. These results are borne out in associations observed in this study, where any physical activity was more strongly associated with better mental wellbeing than playing sports (Hamer, Stamatakis, & Mishra, 2010).

5.5.2.3 Neighbourhoods & Communities

Associations between mental wellbeing and variables related to neighbourhood and communities were not as consistent or strong as health and lifestyle variables across survey years.

The finding that women's perception of night-time safety is associated with their mental wellbeing is reflected in the 2004 study by Young and colleagues. In that study of older Australian women, those who felt it was unsafe to go out at night had significantly poorer mental health. Young also found that feeling safe was less likely among urban-dwelling older women and women who felt it was difficult to cope on their income, suggesting perhaps different aspects of feeling vulnerable- exposed to financial or environmental insecurity (Young, et. al., 2004). For example housing tenure, increasing crime and neighbourhood satisfaction were not consistently associated with mental wellbeing in the present study. Shields, Wheatley Price, and Wooden (2009) report in their study that neighbourhood fixed effects did not account for as much of the variation in life satisfaction as individual-level characteristics among Australians.

The geographically-based measure of deprivation (IMD) was non-linearly associated with mental wellbeing. This finding was unexpected given the predominance of evidence to suggest that greater geographical deprivation is linearly associated with poorer psychological and physiological health outcomes[8]. I found that deprivation (IMD) was less important as a factor related to mental wellbeing than other individual-level responses to demographic, health and neighbourhood questions, possibly reflecting the same effect observed in Shields et. al. (2009). There is however some evidence to support this in studies examining mental health and deprived environments and most recently mental wellbeing (Bond

[8] It was not included in the multiple regression because it was more accurate to use individual-level responses to determine demographic 'status' and reduce the risk of ecological fallacy.

et. al., 2012, Kearns et. al., 2013). This seems to suggest that it may be people's perceptions of their home and neighbourhood which matter more than actual independently measured deprivation levels. It remains unclear whether and the extent to which these views may be affected by mental wellbeing, or mental wellbeing may be affected by these views.

5.5.3 Strengths and Limitations

Design, response and bias

A limitation of this analysis is the cross-sectional study design and the biases inherent in cross-sectional surveys. The direction of any associations identified cannot be demonstrated and no causal relationship between mental wellbeing and the factors can be claimed.

Some factors which might be important or associated with mental wellbeing have not been included in this survey (such as poor mental health or mental illness). The decision was made not to include these factors, however due to the nature and intent of the survey being household, so the inclusion of questions asking about mental illness might have reflected poor ethical consideration by misleading a potential respondent. It was therefore appropriate in this context not to include questions of mental illness in this survey. Other reasons why some possibly relevant questions were not included were: survey length needed to be as short as possible (Galesic & Bosnjak, 2009), and, reflecting one challenge of partnership working, the joint use of the data by Coventry City Council, PCT, and University of Warwick meant that all parties needed to compromise on the inclusion of some questions, so as to maintain a balance of relevance for each group.

It is possible that the low response rate was due to poor winter weather conditions during data collection which could have increased the number of refusals and the number of incomplete questionnaires. The survey mode of face to face interviewing

tends to have lower acquiescence bias than telephone or postal surveys (Holbrook, 2003, McKluskey & Topping 2011). The low response rates may have affected the findings. For example it is possible that persons too unwell to answer the door or not present at home due to illness (at a hospital) may also have poorer mental wellbeing and may thus be under-represented in the sample of respondents, illustrating selection bias (Bhopal, 2002). This may be particularly true for older people, who are more likely to have illnesses (yet also more likely to be at home in the day). For example, those who did respond to the survey might represent a cohort of older people with better health and higher levels of mental wellbeing.

Despite the representativeness of the sample by socio-demographic and geographic variables, it was more or less certain that selection bias is present in the sample. More than half of households approached and asked to participate in 2010 and 2011 refused to do so or were unavailable, and in 2012 it was unknown how many participants refused. Different types of people in different years may decide to take part, and due to being out of the house for employment, caring duties or whilst playing sport; some people may have been unable to complete the survey due to health or mental wellbeing factors which I was unaware of – all of these may affect the findings. Part of the poor response rate may be due to the stratified sampling design (Hoffmeyer-Zlotnik, 2003) where the sample denominator is ‘doors knocked on’ –thousands of homes were approached with only a minority of householders at home, despite interviewers conducting fieldwork during weekends and evenings to capture a representative range of respondents. In the present study, researchers in the field distinguished between doors knocked on and refusals to participate in two of three years, both of which were included in the denominator. The American Association of Public Opinion Research outlined the different types of rates: response rates, cooperation rates, refusal rates and contact rates (AAPOR, 2011;

Groves, 2006, p658). Both the AAPOR and the Office for National Statistics in the UK suggest the inclusion of 'non-contacts' in the response rate calculation.

Groves (p655) also addresses representativeness of the sample and comparison to 'a more accurate source', such as a census. He states this is common practice, and has the advantage that the samples are independent of one another. A disadvantage remains that the 'gold standard' comparator might not be able to offer comparison of the variables being studied, and that these might not represent the larger population. The issue of poor response rate is therefore a common and much debated issue among social survey researchers, and it remains a limitation of this study.

Where I investigated associations within the data e.g. the association between WEMWBS and fruit and vegetable consumption, the effects of lower response rate on findings may not be as much of a problem. This is because since there was a spread of response to both WEMWBS and fruit and vegetable consumption, significant internal associations are likely to represent a true finding for this responding population.

Methodological limitations of analysis

Commissioning regulations of the Coventry City Council required that each year a tender must be advertised nationally and strict criteria for selecting the company commissioned for each Coventry Household Survey. This led to two different companies collecting the data over the three years and resulted in variation in questionnaire formatting, questions, sample structure and approach to data collection (e.g. CAPI used in 2011 versus paper and pencil in 2010). As a consequence of these differences, I did not pool the data.

Other methodological limitations included a collection error occurring in the 2012 data. After the collection of the data I observed that the Likert scale in the 2012

WEMWBS questionnaire, which normally progressed from ‘none of the time’ to ‘all of the time’ had been mis-transcribed from ‘all of the time’ to ‘none of the time’. There was no evidence that the factors associated with mental wellbeing were affected, but it is clear that the WEMWBS score means were significantly higher in 2012 than in 2010 or 2011, and it may have been due to this questionnaire error.

Finally, with data as complex and interconnected as the independent and dependent variables in this series of surveys, there are limitations to regressing the variables in a linear model. Some variables, such as self-rated health, were found to be multicolinear with WEMWBS and were removed from analysis. It is possible that there were independent variables which interacted to affect the regression model, and perhaps more likely that nonlinear functions of some variables (such as feedback loops, meditating or moderating variables (Baron and Kenny, 1986)) might operate which could not be statistically observed when using a linear model. However, multiple linear regression has the advantage of ‘considering’ a set of independent variables together to estimate the variation explained by the combined variables on the dependent variable, WEMWBS. In this way, this method reflects attempts to consider multiple factors simultaneously, rather than focusing on one variable at a time, and arguably does a better job of reflecting the correlates of mental wellbeing as they operate in the ‘real-world’.

CHAPTER SUMMARY

In this chapter, I collected and analysed cross-sectional survey data. I found a range of factors associated with higher levels of mental wellbeing in Coventry, some of which have been suspected (U shaped association with age, male gender, 5+ daily portions of fruit and vegetables), some confirmed (regular physical activity) and some that were inconsistent with much literature to date (non-linear pattern between deprivation levels and mental wellbeing) I discussed these findings compared to

other studies. These data were used to better understand and contextualise the findings in the evaluation of CHIP interventions, described in the next chapter.

CHAPTER 6: QUASI-EXPERIMENTAL BEFORE AND AFTER EVALUATIONS

6.0 QUASI-EXPERIMENTAL EVALUATIONS

In this chapter, I conduct a 'rapid review' of subject-specific literature on interventions evaluated and described in this chapter. I then describe the methods and results of five quasi-experimental before and after outcome evaluations of CHIP interventions. I summarise and discuss my review and evaluation findings.

I ask, 'Do CHIP interventions affect the mental wellbeing outcomes of participants when evaluated using a quasi-experimental before-and-after design?'

6.1 INTERVENTION SELECTION

Thirteen of more than 30 CHIP interventions were identified as potentially suitable for integrating mental wellbeing outcomes into the evaluation structure (Appendix 2 for table). Suitable interventions were identified using the following criteria:

- A local need was identified based on epidemiological information from Coventry
- The type of intervention could accommodate a before and after study design-participants made contact with intervention and staff at least three time points
- No potential participants had been exposed to the intervention before the outcome measurement would be collected.
- The staff collecting the outcome measure stated they had the capacity and willingness to collect mental wellbeing information in their evaluation structure
- The number of participants estimated to participate achieved minimum sample size requirements.

Five interventions met these criteria located in three projects. The projects were ‘Alcohol’ ‘Healthy Schools’ and ‘Healthy Weight’. Table 12 below outlines the projects and describes the interventions.

Table 12: Description of Interventions evaluated					
Project	Intervention	Abbreviation	Description of intervention	Length of intervention	Collection time-points
Alcohol	Structured Day Care	SDC	Group therapy using a daily 12-step focused therapy (TSF) for alcohol abuse.	12 weeks	1. Baseline 2. 6 weeks 3. 12 weeks 4. 6 week follow up
	Alcohol Treatment Requirement	ATR	One to one counselling service to provide court-ordered individual therapy for the treatment of alcohol dependence	6 months to 3 years	1. Baseline 2. 3 mo/mid-treatment 3. 6-9 mo/second to last session 4. 6 week follow up
Healthy Schools	Wellbeing Mentors (WBM)	WBM	Identify secondary school pupils having health related barriers to learning. Provide 6-weeks of weekly sessions of one to one support to pupils.	6 weeks	1. Baseline 2. 6 weeks completion; 3. 10 week follow up
Healthy Weight: Physical Activity	One Body One Life	OBOL	Family-based course of exercise and education about healthy lifestyles.	10 to 12 weeks	1. Baseline, 2. 6 weeks, 3.10-12 weeks/completion, 4. 3 month follow up
	Fit as a Fiddle II	FAAF	'light exercise' in a group for people 65+, delivered in community settings.	On-going /indefinite	1. Baseline 2. 6 weeks 3.12 weeks

6.1.1 Participant selection

Participant selection was purposive. All participants who attended a given intervention over a set period of time and met inclusion criteria were included in the study. People who gave their informed consent to participate in the intervention and complete WEMWBS were included in the analysis. Individuals already completing the intervention when the evaluation commenced were excluded. Participants who did not give consent were not included in the analysis.

6.2 REVIEW OF EVIDENCE FOR THREE CHIP PROJECTS

Introduction

In this section I describe the methods and results of my rapid review of evidence of effectiveness for the three projects (a total of five interventions) evaluated in this study. I have justified my approach and methods in Chapter 4: Methodology (p126).

As identified in the background of this study, the Coventry Health Improvement Programme aimed to address areas of health that were poorer for Coventry residents than for England as a whole. Two of the three projects aimed to improve health outcomes in areas of major health concern for Coventry: Alcohol misuse, and overweight and obesity. The third project had wider implications for health and social care for young people in Coventry. Each of the interventions selected for review in this section therefore reflect the interventions that were selected for evaluation of mental wellbeing outcomes as part of CHIP.

6.2.1 METHOD

A rapid review can be defined as a literature review conducted systematically but within a limited time frame and/or with restrictions on the scope of the search

(Petticrew and Roberts, 2008). The purpose of this rapid review was to identify whether the interventions commissioned by CHIP were supported by good available evidence. As reflected in section 2.2 of the background, CHIP projects were commissioned quickly and reflected a range of approaches to their selection, with some projects undertaken that could be considered 'experimental...focussing on areas of intervention which are not well evidenced' (Simon & Barbosa, 2009). In this sense, some of the planned CHIP projects were not evidence based; they were not prospectively chosen because they were found to be evidence based.

I restricted my search to four research databases to identify high quality systematic reviews and reviews of reviews of public health interventions. I searched the Cochrane Collaboration, Campbell Collaboration, The US Guide to Community and Preventative Services, and National Institute for Health and Care Excellence (NICE) Libraries to identify reviews and reviews of reviews of relevant interventions.

From these initial searches I used 'ancestral' searching to identify primary research, key journals, and Department of Health documents, and databases such as Pubmed and CSA Illumina to identify other sources of information.

I aimed to contribute to the evaluation of CHIP by appraising and summarising systematic review evidence relevant to the interventions adopted in 3 areas: Alcohol- Structured Day Care, Alcohol- Treatment Requirement; Healthy Schools- Wellbeing Mentors; Healthy Weight- Physical Activity for older people and for families. I report the key findings, and reflect on the quality and content of the reviews using the RE-AIM framework to structure my findings.

6.2.1.1 Review Questions

1. Is the evidence reflected in the CHIP interventions?

2. Is Coventry implementing appropriate, evidence based interventions in the Alcohol, Healthy Schools, and Healthy Weight projects?

6.2.1.2 Search Approach

The search for intervention reviews was focused within key databases for systematic reviews of health services, medicine, and social services literature, a strategy suggested by Smith and colleagues (Smith, et. al., 2011). The quality of the reviews retrieved was assessed using the RE-AIM framework for evaluating the public health impact of interventions (Glasgow et. al., 1999). Searching databases proven to be the best sources of high quality systematic reviews ensures the retrieval of excellent quality evidence without systematically reviewing the entire body of literature.

6.2.1.3 Search Strategy

I used the following steps:

1. Define inclusion and exclusion criteria.
2. Define search topics for each select databases.
3. Search review database by specific topic.
4. Report number of retrieved abstracts.
5. Select reviews for further examination which meet initial search criteria on basis of titles.
6. Examine abstracts for potential inclusion
7. Exclude studies that do not meet inclusion criteria on abstract examination.
8. Report number excluded and reasons why.
9. Retrieve full systematic reviews.
10. Appraise, present key findings discuss limitations and reflect using RE-AIM framework.

6.2.1.4 Selected databases

The Cochrane collaboration library provides evidence based health care reviews of the highest methodological quality for the purpose of providing information to make evidence based decisions in clinical practice and health services. The advantage to appraising Cochrane reviews is that they provide the most reliable evidence available. The disadvantage is that the latest evidence or newer approaches or methods for interventions won't be included in a Cochrane review because it is a collation of evidence gathered over periods of time, place, language and culture.

The Campbell collaboration library provides systematic reviews of the effects of social interventions, from an international network of researchers. The aim of the collaboration is to help people make well-informed choices by 'preparing, maintaining, and disseminating systematic reviews in education, crime and justice and social welfare'.

The Guide to Community Preventive Services is the result of a US Public Health task force set up in 1996 to conduct systematic reviews of literature and establish a multiple user, comprehensive guide to evidence for the effectiveness of various community-based health interventions. Recommendations and guidance for decision making are included in a website where the information is freely available. The Guide to Community Preventive Services is an online resource from the US Government.

National Institute for Health and Care Excellence (NICE) guidelines are a UK source of evidence based medical and public health guidance and recommendations for practice. NICE public health guidance can focus on a topic, population or setting.

6.2.1.5 Inclusion and exclusion Criteria

Reviews of the following interventions were included:

- Alcohol- Structured Day Care, Alcohol Treatment Requirement
- Healthy Weight- Physical Activity: For older people; For families
- Healthy Schools- Wellbeing Mentors

Alcohol- Aim to reduce excessive alcohol consumption, misuse of alcohol, or to sustain abstinence.

Table 13: Alcohol inclusion & exclusion criteria

Selection Criteria	**Inclusion & Exclusion**
Population	Reviews including people who consume alcohol Excludes: People who do not consume alcohol
Interventions or Exposure	Treatment in group atmosphere, 12-step focused therapy Treatment in a one to one individual, client driven plan. Excludes: Pharmacological interventions
Outcomes measured	Change in measures associated with reduction in amounts of alcohol consumed- quantity, amount, or time period. Individual assessments of alcohol use Secondary outcomes Evaluation of environment
Study design	Systematic reviews only
Study characteristics	English speaking, reviews assessing the effectiveness of individual or group forms of treatment, ideally 12-step focused therapy for a specified period of time to reduce alcohol consumption identified as problematic (acute or chronic). Published in the past 10 years.

Healthy Schools- Aim to improve wellbeing of pupils through removing health related barriers to learning by providing counselling/ mentorship.

Table 14: Healthy Schools inclusion & exclusion criteria	
Selection Criteria	**Inclusion & Exclusion**
Population	Reviews of secondary school age young people <16 Excludes: College and university students, primary school children
Interventions or Exposure	In-school counselling interventions (e.g. one on one or group support)
Outcomes measured	Reviews including any of the following: Attainment and attendance, graduation rates, achievement test scores Measures of change in mental health, psychological functioning, mental wellbeing, using validated scales. Secondary outcomes: Possibly physical health
Study design	Systematic review
Study characteristics	English speaking; reviewing the effectiveness of intervention(s) in schools from any country, published in the last 10 years.

Healthy Weight- Aim to reduce overweight and obesity, increase knowledge of healthy eating (resulting in increase in fruit and vegetable consumption), and improve wellbeing (reflecting OBOL). Aim to improve physical mobility and general wellbeing in older people (reflecting FAAF).

Table 15: Healthy Weight – Physical Activity inclusion and exclusion criteria	
Selection Criteria	**Inclusion & Exclusion**
Population	All age groups and abilities in one community
Interventions or Exposure	Community-based programmes (interventions delivered in groups, with one element of social support or interaction) Excludes: Individual, pharmacological intervention
Outcomes measured	Weight (BMI, WHR, adiposity) functioning and mobility; physical activity measures:, degree, quality, quantity, nutritional knowledge increase, general wellbeing, mental wellbeing or mental health
Study design	Systematic review
Study characteristics	English speaking, from any country, published in the last 10 years.

Table 16: Rapid review search result			
Database	**Search**	**Number of papers identified**	**Selected**
Cochrane collaboration library (inception to 2011) (Search date: 17.05.11)	**Alcohol** Alcohol AND Treatment AND group AND individual AND Misuse OR addiction OR abuse	=232/6641 →19 for further viewing → 9 still further viewing → 1 selected	1: Ferri 2006
	Healthy schools/wellbeing mentors Counselling OR support OR mentor AND Mental wellbeing OR well being OR mental health AND School AND intervention AND achievement OR attainment	=133/6641 →6 for further viewing→0 selected Excluded: interventions not similar enough	0
	Healthy weight-Physical activity **(**17.05.11)**,** Advanced search Physical activity AND intervention AND Knowledge AND c community And Obesity OR overweight. 'Search all text' Ticked 'search all of the Cochrane library'	=40/6641 → 10 for further viewing → 4 selected for further review=2 selected	2 : Shaw 2009 Howe 2007
Campbell collaboration library (inception-2011) (Search date: 18.05.11)	**Alcohol** Alcohol AND Treatment OR therapy AND group OR individual AND misuse OR addiction OR dependence All documents, 2002-2011.	= 58/178 articles retrieved. →6 potential Excluded: did not meet basic inclusion criteria	0
	Healthy Schools -Wellbeing Mentors Counselling AND school AND mental health OR mental wellbeing AND intervention AND academic	=13/178→1 potential. → 0 retrieved for abstract viewing. Excluded: did not meet basic inclusion criteria	0
	Healthy weight- Physical Activity Physical activity OR exercise AND reduce overweight OR obesity AND intervention AND community AND knowledge	=6/178 articles retrieved →2 potential	0
Guide to community preventive services website (inception-2011)	**Alcohol treatment** Search by topic group: Adolescent health, alcohol, mental health, nutrition, social environment.	=9 identified → 1 potential, 1 excluded Excluded: None of the harm reduction strategies addressed are treatment	0

(Search date: 18.05.11)	**Healthy Schools- Wellbeing mentors** Adolescent health, alcohol, mental health, social environment.	=4 identified → 0 meet inclusion criteria Reasons for exclusion: Interventions focused on reducing alcohol use in young people and identifying and treating mental illness	0
	Healthy Weight- Physical Activity Search by topic group: Nutrition, obesity, physical activity, adolescent health 6 types of physical activity interventions. Individually adapted behaviour change programs, social support interventions in community settings, family based social support, college based, enhanced school based physical education, classroom based health education to reduce tv and video game playing.	= 6 identified → 2 potential, 2 excluded Reasons for exclusion: Did not meet inclusion criteria, interventions tested not reflected in this study.	0
NICE Public Health Guidance (all reviews examined) (Search date: 17.05.13)	**Alcohol** Searched all guideline reports	=3 /44 → 2 potential → 1 included (NICE clinical guideline 115)	1: NICE 115
	Healthy Schools- Wellbeing Mentors Searched all guideline reports	= 4/44 →1 potential → 1 selected → PH20	1: PH20
	Healthy Weight- Physical Activity Searched all guideline reports	= 11/44 → 3 potential→1 selected → PH16 PH2 excluded: no interventions reviewed matched interventions evaluated here. PH17 excluded: the outcome reported for children only	1: PH16

6.2.1.6 Analysis approach

The systematic reviews obtained were appraised using the PRISMA statement checklist for reviewing systematic reviews (Liberati et. al., 2009). In order to better understand some of the wider public health elements of interventions, the 'RE-AIM' framework was used to consider the breadth of public health relevant-information discerned from the reviews (Glasgow Vogt, Boles, 1999).

The RE-AIM framework structures 5 elements important for evaluating evidence of public health promotion interventions. The elements are Reach, Efficacy/Effectiveness, Adoption, Implementation, and Maintenance. It is common practice to evaluate both reach and efficacy, but not as common to evaluate health promotion programmes on all 5 dimensions. The central tenet of RE-AIM is 'the ultimate impact of an intervention is due to combined effects on 5 evaluative dimensions' (Glasgow, Vogt, Boles, 1999).

The evidence from reviews is summarised along with a discussion of strengths and weaknesses, recommendations, and the applicability of findings to/for the CHIP evaluation. The appraisal reports where reviews and individual studies evaluate positive mental health, quality of life outcomes or mental wellbeing. Finally I summarise the review methods and results and highlight key issues using the RE-AIM framework (Table 17).

Table 17: RE-AIM Dimensions for evaluating public health impact.	
Dimension	**Aspects of evaluation**
Reach	Proportion of the target population that participated in the intervention
Efficacy	Success rate if implemented as in guidelines defined as positive outcomes minus negative outcomes
Adoption	Proportion of settings, practices and plans that will adopt the intervention
Implementation	Extent to which the intervention is implemented in the real world
Maintenance	Extent to which an intervention is sustained over time Funding is just one of many reasons why an intervention might not be sustained, but other more hidden reasons would include lack of staff morale in delivery and internal and external challenges to the intervention.

Table adapted from Glasgow, Vogt, Boles, 1999.

6.2.2 RESULTS

The following reviews met inclusion criteria from Tables 13-15 respectively.

Alcohol

1. **'Ferri 2006'** Ferri, Marica, Amato Laura, Davoli, Marina. (2006) Alcoholics Anonymous and other 12-step programmes for alcohol dependence. Cochrane Database of Systematic Reviews: Reviews 2006 Issue 3 John Wiley & Sons, Ltd Chichester, UK DOI: 10.1002/14651858.CD005032.pub2
2. **NICE clinical guideline 115:** Alcohol dependence and harmful alcohol use. http://guidance.nice.org.uk/CG115

Healthy Schools: Wellbeing Mentors

No systematic reviews were identified in the Cochrane database or the Community preventive guide that related to promoting *mental wellbeing* in the population as an

intended intervention. Only the NICE guidance review met inclusion criteria. I used ancestral searching to locate peer reviewed published literature on this topic, which are both reviewed here.

1. **'Wells 2003'** Wells, J., J. Barlow, S. Stewart-Brown. (2003). "A systematic review of universal approaches to mental health promotion in schools." Health Education **103**(4): 197-220.
2. **'Murray 2007'** Murray NG, Low BJ, Hollis C, Cross AW, Davis SM. (2007) Coordinated school health programs and academic achievement: a systematic review of the literature. J Sch Health. 2007 Nov;77(9):589-600. Review. PubMed PMID: 17970862.
3. **'PH20'** Social and Emotional Wellbeing in Secondary Education. National Institute for Care and Excellence, Issued September 2009. Access:<guidance.nhs.org.uk/ph20>

Healthy Weight: Physical Activity

1. **'Shaw 2009'** Shaw KA, Gennat HC, O'Rourke P, Del Mar C. Exercise for overweight or obesity. Cochrane Database of Systematic Reviews 2006, Issue 4. Art. No.: CD003817. DOI: 10.1002/14651858.CD003817.pub3 (Edited and reprinted in 2009).
2. **'Howe 2007'** Howe TE, Rochester L, Jackson A, Banks PMH, Blair VA. Exercise for improving balance in older people. Cochrane Database of Systematic Reviews 2007, Issue 4. Art. No.: CD004963. DOI: 10.1002/14651858.CD004963.pub2
3. **'PH16'** – Mental Wellbeing and Older People, National Institute for Care and Excellence, 2009

6.2.2.1 ALCOHOL

Summary of therapeutic interventions for alcohol dependence

The search resulted in two reviews. One review concerned 12-step approach interventions aiming to reduce dependence on alcohol. The other review was the NICE Clinical Guideline (CG115) for Alcohol Use Disorders. The findings are reported and summarised below.

1. **Alcoholics Anonymous and other 12-step programmes for alcohol dependence**

The Ferri review (2006) meets some but not all the criteria of the PRISMA statement for systematic reviews that evaluate health care interventions (Liberati, 2009). The review does not clearly report identified outcomes. The key feature of this review is also that it updates past systematic reviews and aims to identify not only Alcoholics Anonymous (AA) interventions but other 12-step facilitation (TSF) programmes to reduce alcohol intake, achieve and maintain abstinence, improve quality of life and reduce alcohol related harm.

Ferri 2006 intended to compare AA or TSF versus no intervention; TSF versus other interventions; TSF programmes versus TSF variants, and included studies had to be randomised controlled trials (RCTs). Adults with alcohol dependence attending AA or TSF were included. The severity of dependence was reported. Qualitative outcomes were reported if included in studies.

The search identified 117 studies, of which 8 were included. All of the studies were from North America.

TSF, motivational enhancement therapy (MET) and cognitive behavioural therapy (CBT) all reduced drinking consequences identified by a valid and reliable tool, the addiction severity index (ASI).The review did not compare AA or TSF with no intervention, which would have proved useful to contextualise results. When TSF

was compared to relapse prevention therapy (RP), there were no observable differences in outcomes measured for either approach. TSF/AA and minimal treatment (the control) both showed significant reductions in self-reported reduction of drinking. One study in the review reported that TSF and CBT appeared to be associated with a greater reduction in drinks per drinking days than MET. The one year follow up for that study showed that TSF participants had better 'percentage days abstinent' than the other groups.

While the review was helpful in identifying effects of different types of alcohol dependence treatment using the same validated tool, the review is not clear in its reporting of outcomes. Outcomes reported in the methods section are sometimes misleading and complicated. The review question is whether TSF or AA is better than MET or CBT, rather than whether getting treatment at all is helpful. This is understandable given the ethical implications associated with not providing treatment or even withholding treatment (e.g. waitlist control) for people dependent on alcohol. The review suggests that comparison therapies were, in some studies, equally effective in reducing alcohol addiction severity. The review also suggests that using a therapeutic intervention such as AA, TSF, CBT, or MET to reduce a variety of alcohol related harms caused by alcohol dependence appears to be moderately effective. It does not identify whether or not using any therapeutic intervention is better than receiving no therapeutic intervention at all. It is difficult to make overall conclusions about the effectiveness of TSF because of the poor quality of studies (mainly data collection), the small number of studies included, the small numbers of participants within most studies and the lack of statistical analysis reported in the review. There is no conclusive evidence to support the use of AA or TSF over other types of therapeutic intervention for treating alcohol dependence; the evidence from this review suggests the effects are approximately the same.

2. NICE Clinical guideline 115: Alcohol dependence and harmful alcohol use.

The NICE CG115 guideline is a comprehensive guideline offering information on the diagnosis, assessment and management of harmful drinking and alcohol dependence (NICE, 2011). I examined the review of psychological and psychosocial interventions and I excluded the review of pharmacological and other interventions. I focused specifically on approaches to the treatment of alcohol problems as used in the CHIP projects I evaluated: 12-step group approaches, denoted as 'TSF' (CHIP project: Structured Day Care, SDC), and Cognitive behavioural, or CBT, one to one approaches (CHIP Project: Alcohol Treatment Requirement, ATRs).

The guidance developed and reviews of evidence were completed to a high standard. The NICE authors conducted a meta-analysis combining six randomised controlled trials (RCTs) to compare the effectiveness of TSF versus another active control (a non TSF treatment for alcohol misuse – CBT, couples therapy and psycho-educational education). They studied 2556 participants and found no differences in outcomes between TSF groups and other active treatment groups in terms of abstinence from alcohol at 12 month follow up. The authors observed some evidence of greater reduction in alcohol consumed at 6 months for those undergoing TSF, compared with other active interventions. TSF approaches showed better retention of participants at 9 months, but not at other time points. The authors state that the evidence from the review is of a high quality based on the GRADE system meaning that further evidence was not likely to change the estimate of the effect.

Approaches to treatment using CBT were also examined. Evidence was available to identify the effect of CBT compared with control (information and referral) and treatment as usual (unstructured and nonspecific therapy and support). They included 20 trials and 3970 participants. They found that CBT was significantly better than the control at reducing the number of heavy drinking episodes, but no

differences were observed between treatment and control group for reduction in number of days drinking overall or the number of lapses or relapses compared with treatment as usual. The evidence supporting these findings was graded as 'moderate', meaning that further research is required.

When CBT was compared with other active treatments, no differences in the level of effectiveness were observed in the meta-analysis. There was evidence that CBT was more effective than other active treatments at maintaining abstinence or 'light days' at an 18 month follow up, but there were no significant differences in the reduction of heavy drinking episodes or amount of alcohol consumed directly after the intervention or at the 18 month follow up.

The NICE guideline 115 demonstrates that overall, there were no significant differences in effectiveness of TSF or CBT for treating alcohol misuse and, just as Ferri (2006) found, both treatment approaches were equally, moderately, effective.

Key messages identified for alcohol dependence intervention

Reach: While individual and group therapies for alcohol dependence show some degree of effectiveness, they do not necessarily impact on the overall burden of alcohol related harm at the population level. In this way, this type of intervention is not community based, and should not be evaluated using community level outcome measures.

Efficacy/Effectiveness: Therapeutic interventions showed small, but consistent reductions in at least one of a variety of possible outcome measures. However, these overall effects were minimal and the long term sustainability of the intervention is not known from this review. This evidence reflects aspects of Brownson and colleagues 'type 1' and 'type 2' evidence, demonstrating a necessity

to develop types of interventions that demonstrate efficacy *and* effectiveness (Brownson, Fielding, Maylahn, 2009). I found little information or discussion on 'type 3' evidence (how an intervention should be implemented), examining contexts in which the interventions were conducted, or implementation factors and their effects on outcomes and variation between the ways in which interventions were implemented. Type 3 evidence might also provide more information on how RCTs of alcohol treatment programmes might be more (or less) useful and in what circumstances, or might be able to specify which interventions might be more effective in which circumstances/contexts.

Adoption: These therapeutic interventions are already commonly adopted for use by relevant service provision structures for alcohol dependence.

Implementation: From a public health perspective, it is worth considering implications of implementing community-wide public health initiatives to reduce alcohol related harm as there is strong evidence to support and recommend certain preventive services within a community.

Maintenance: These types of alcohol services are already established into either city council or probation services. Future evaluation efforts might concentrate on identifying levels of effectiveness, areas for improvement and the development of alcohol harm prevention interventions.

These reviews support both of the CHIP interventions aiming to reduce the severity of alcohol misuse in individuals attending treatment.

6.2.2.2. HEALTHY SCHOOLS: WELLBEING MENTORS

Summary of interventions to promote mental health in schools

The search resulted in two systematic reviews of interventions designed to improve various types of health concerns (including mental health) in a school setting. The findings are reported and summarised below. Primary school interventions were excluded from the analysis because the Healthy Schools project being evaluated in this study was only conducted in secondary schools.

1. A systematic review of universal approaches to mental health promotion in schools

The review by Wells (2003) was very well conducted and met most of the criteria of the PRISMA statement for systematic reviews (Liberati et. al., 2009). A key feature of this review was that it incorporated three approaches for mental health promotion in school including a mental illness prevention intervention and a combination programme which incorporates elements of both approaches. The reviewers thoroughly discussed the implications for practice and research and suggested ways forward for US and UK audiences.

Wells (2003) systematically reviewed research of school-based interventions to promote positive mental health in pupils. There were 17 studies included in the review. The age groups ranged from schoolchildren to high school students with the majority of studies from the US (age range 9 to 18 years). Approaches involved varying levels of school and community awareness, mental health promotion, and mental illness prevention. Approaches reviewed were: Whole school, classroom based, and those extending beyond the classroom, but not involving the whole school. Health promotion studies measured personal and interpersonal behaviours characteristic of good mental health. These interventions mainly focused on:

- Conflict resolution

- Prosocial and antisocial behaviour
- Prevention of depression and suicide
- Promotion of self-esteem, self-concept, emotional literacy, enhancing understanding and accepting self and others.

Three out of 17 included studies had positive results on greater than 70% of their reported outcome measures. The study interventions were:

- **School Transition Environmental Project**- mental health promoting beyond classroom approach that was teacher led continuously for over a year.
- **School Development Project**- a mental health promoting whole school approach delivered by teachers and an external deliverer continuously for one year.
- **Suicide Prevention-** mental illness prevention in a classroom based environment delivered by outsiders intermittently over two years.

Programmes showing the most success were more likely to be mental health promoting programmes provided continuously over longer periods of time (> one year).

The review supported the use of whole-school approaches aiming to involve everyone in the school – pupils, staff, families, the community, and to change the environment and culture of the school. It demonstrated that a change in ethos required first a change in attitudes, beliefs, and behaviour and that consideration and support for teachers and staff during transitional periods could be worthwhile in schools considering changing their approach to mental health promotion or mental illness prevention. Longer term interventions with repeated exposure to key messages and skills development were more successful than shorter term ones with less exposure. One study found evidence of effectiveness for preventing

mental illness in high risk groups. This review provides evidence that universal school mental health promotion programmes can be effective for improving mental health outcomes in young people, and that is possible to have a positive impact on children's mental health through school based programmes mental health promotion initiatives.

2. Coordinated school health programs and academic achievement: A systematic review of the literature'.

Murray (2007) was conducted as a narrative literature review. Although it is systematically conducted, it did not address a substantial number of items within the PRISMA checklist (Liberati et. al., 2009). This review contributed some knowledge to the CHIP evaluation, but a more robust narrative synthesis would have been more useful. A key element of this review was that it incorporated studies which tested elements of the Coordinated School Health Program (CSHP).

This review examined existing literature on the effectiveness of a model for US-based School Health Services for improving academic achievement-- the Coordinated School Health Program (CSHP). The studies were not comparable, mainly because none measured all the elements of CSHP. A wide range of interventions and outcomes was reported. Outcome measures ranged from direct quantitative measures such as test scores to proxy measures such as tardiness in class. Where test scores were available, the type of test would vary in subject matter (e.g. Maths, English, Science).

Only one study in this review evaluated a school counselling and mental health service intervention similar to the intervention conducted during CHIP (Gall et. al., 2000). The population was 383 pupils aged 13-18 years. Three quarters were Hispanic and a third received state-supported health insurance, an indicator of low income or deprivation. The study found that absenteeism decreased by 50%; and

tardiness decreased by 25% at the 8 week follow up. Pupils who were defined as 'cases' using the Paediatric Symptom Checklist were more likely to be referred to counselling and had significantly lower academic functioning. Pupils referred to counselling significantly decreased absence from school while those not referred increased absences and tardiness. However, the review did not elaborate on actual mental health measures used in the study, the outcomes, or how these relate to academic achievement in the short and the long term. It is difficult to know what aspects of the intervention were most effective. This study is not generalisable to other populations without further investigation and replication of results.

Other studies included in the review identified that schools devoting more time to physical education showed no negative effects on academic outcomes. This finding refuted the stated claim that more time spent in physical education means less time for classroom learning. One study included in the review examined an intervention to improve academic outcomes among children with asthma.

Overall, Coordinated School Health Programs in the US showed some positive results for school-supported health-improving academic achievement in at-risk children. Outcome measures were varied and inconsistently applied. School subject improvements were present in some intervention groups and not in others testing the same subjects on similar projects. Methodological steps to minimise bias were not reported, e.g. allocation blinding of teachers who acted as outcome assessors e.g. reporting conduct disorder.

Due to study variation, lack of comparable outcomes, and unclear identification of included studies, these results are not generalisable to general school populations, but warrant further investigation for 'at-risk' pupils. A strength of this review is that it brings together a body of evidence from which to work- future programme development as well as research and evaluation can benefit and learn much from how these interventions and studies have done poorly or well. There is insufficient

evidence however from this review to support school based mental health counselling interventions to improve academic achievement outcomes. This does not suggest that there is evidence to show the interventions are ineffective, only that the quality of the current studies is poor, and their lack of rigour reduces confidence in the reported outcomes.

3. Social and emotional wellbeing in secondary education: effectiveness review

This review was conducted in conjunction with other reviews for the National Institute for Care and Excellence Public Health Guidance. It was conducted to a high academic standard and meets the PRISMA statement checklist. The review took a two-pronged approach to social and emotional wellbeing, one approach examined studies addressing the prevention of negative/antisocial behaviours such as bullying and problematic behaviour, while the other examined studies addressing prosocial behaviours. There were 40 studies identified, 30 which addressed antisocial behaviour and 10 which addressed prosocial behaviour and which were reported as generally being of high quality (as indicated by the NICE methodology checklist). Most of the prosocial studies were from the US and used a variety of intervention approaches. None were from the UK. All of the interventions were at the whole school level in curriculum-based interventions. Characteristics of successful programmes included prosocial skills development as a core mechanism of change; not dissimilar to Wellbeing Mentors (WBM) from CHIP. For example, Shochet and colleagues assessed an 11-session intervention called the Resourceful Adolescents Programme (RAP) which aimed to build resiliency skills. The RCT found that there were reductions in anxiety and depression at the programme follow up compared to a lack of reduction in the control group. One other study aiming to develop resilience was also found effective, and deemed of good quality (Quayle et. al., 2001). In both the Shochet and Quayle studies, the

interventions promoted positive behaviours and educated pupils to develop positive coping skills, and were measured using mental illness scales (as the interventions aimed to reduce mental illness). It is possible that had the interventions used mental wellbeing as an outcome, more information about the programmes may have come to light.

Nevertheless, these good quality studies demonstrated more positive outcomes for the pupils completing the interventions than for the pupils who did not complete the interventions. Most relevant to the present study is that the common mechanism of change in these studies appeared to be the development of prosocial skills, reflecting a core component of the WBM programme and lending support to the efficacy of the proposed mechanisms of change (though not necessarily to the intervention itself).

A limitation of the review relates to lack of applicability to WBM. This is due to the fact that the majority of included studies focused on preventing antisocial behaviour (mainly bullying and disruptive behaviour) and while important, is not the focus here and highlights the paucity of research reviewing interventions such as WBM focused on improving mental wellbeing, using positive outcome measures such as WEMWBS.

Key messages identified using the RE-AIM Framework for mental health promotion in schools

Reach: There is potential for school based health promotion interventions to reach all schools in a target population. Interventions that are designed specifically for high-risk pupils, classes, or schools should not be generalised to pupils, classes, or schools deemed not to be high-risk as these entail different approaches to implementation.

Efficacy/Effectiveness: Interventions that proved most effective were implemented over at least one year continuously, suggesting that repeated exposure to relatively intense interventions is likely to increase efficacy. Interventions that included the development of prosocial skill development were also shown to be effective at reducing anxiety and depression. It is unclear (though logical) as to how or to what extent the interventions improved mental wellbeing.

Adoption: For a whole school approach to be effective, it is important to have teacher participation and support. Parental engagement also demonstrated some evidence of positive outcomes for the wellbeing of young people, and may be worthwhile to increase the impact of the intervention upon schoolchildren and their families.

Implementation: The incorporation of the views of teachers, parents and students could be beneficial in easing the transition of changes implemented in the school. Models such as the Coordinated School Health Program can be difficult to compare and evaluate--and therefore difficult to determine effectiveness-- if they are not wholly adopted or the 'dose' of intervention varies and is not adequately recorded. All of the school interventions included in the Murray (2007) review implemented elements of the program, but did not subscribe to the entire model. This could have been related to costs and time, or difficulty in gaining commitment from all elements of the school system. Furthermore, it remains unknown if implementing the entire model would be more effective than targeting elements, or if the program would be more or less effective for the general populations of pupils, including both high- risk and non-high-risk students.

Maintenance: A combination of quantitative outcome measures and qualitative evaluation approaches can benefit implementation and increase the likelihood of

sustaining programmes in the long term by adapting programmes to schools and remaining relevant to target audiences: pupils, staff, and parents.

6.2.2.3 HEALTHY WEIGHT: PHYSICAL ACTIVITY

Summary of physical activity interventions

The search resulted in three systematic reviews of exercise-based interventions. The findings are reported and summarised below.

1. Exercise for overweight and obesity

The review Shaw (2009), was expertly conducted and meets the criteria of the PRISMA statement for systematic reviews (Liberati et. al., 2009). The key feature in this review was that it was exhaustive in capturing research using stringent methodology for demonstrating effects.

There is a lack of good evidence supporting exercise as a means to achieve weight loss. However, there is evidence supporting exercise as a means of preventing weight gain (Shaw 2009). This review included studies of RCTs examining body weight change using one or more prescribed recommendations of physical activity with a defined objective. The primary outcomes were weight indicators such as body mass index (BMI), morbidity and mortality, and quality of life measures. It targeted overweight or obese adults.

There were 3476 participants from 43 studies. A meta-analysis of results found that, overall, those receiving the exercise intervention showed small weight loss compared to no treatment controls. Exercise + diet showed greater weight reduction than diet alone, and exercise of greater intensity increased the magnitude of weight loss. Multiple outcome measures differed significantly across studies resulting in considerable heterogeneity. The review did not address adverse events, quality of life, well-being, morbidity, costs or mortality.

From this review it appears that exercise is a good intervention for weight management and that even if no weight is lost through exercise it is still beneficial to health. Indicators of health beyond BMI should be collected during interventions which aim to improve health through weight management.

The review highlighted some of the challenges associated with weight loss and dietary interventions, mainly that participants 'relapse' and fall back into old habitual behaviours. The review did not reveal any clear evidence on what particular types of intervention appear to be the most effective for weight management. A strength of the review is that it recognises the importance of quality of life on physical health related outcomes and included this in the review search. A weakness of the studies was the lack of actual data on quality of life. Other limitations include the large number of studies excluded on the basis of loss to follow up and the lack of longitudinal studies. From a public health perspective, high proportions of follow up loss are common and will more than likely remain a feature of the majority of studies, which may bias the 'real-world' application of these findings. Longitudinal studies could provide more information on sustained intervention behaviours and outcomes over time and could measure effects on quality of life, mental wellbeing, morbidity and mortality.

This review supports the use of exercise as a weight loss intervention, especially when combined with positive dietary change. The authors describe interventions that are very similar to OBOL.

2. Exercise for balance in older people

Howe (2008) was expertly conducted and meets the criteria of the PRISMA statement (Liberati, et. al., 2009). The specificity of this review in defining and

characterising exercises and primary outcome measures of the included studies is a key feature for its practical use.

The review reports that poor balance is associated with an increased risk of falling in older adults. There is some research supporting exercise interventions as an effective means of improving balance. The rationale for this review was to identify the most recent literature published in this area and to clarify which element or combination of elements is necessary to achieve better balance.

The review identified 2883 participants in 34 studies. 29 of the 34 studies did not follow up participants after completion of the intervention. Interventions lasted from 4 weeks to 12 months; classes ranged from fortnightly to everyday, though most classes were 3 times per week for 1 hour per session. The majority of participants were women over the age of 75. Exercises found to improve balance included: gait, balance, coordination and functional task exercise; strengthening exercise; '3D' exercise (including dance, tai chi, qi gong, yoga; and general physical activity (e.g. walking).

A variety of types of exercise proved effective in improving balance in older people. Measures that were easy to use and required little equipment in community settings demonstrated 'clinically important' improvements. This suggests that they should be considered during the design and development of future interventions for exercise in older people. A strength of this review was that the reviewers discussed enthusiasm for exercise uptake or continued uptake after the completion of the interventions, an important factor for evaluating long term impact as well as efficacy. A weakness of the review is the lack of reporting on outcomes related to mental health and wellbeing. This highlights the lost opportunity of studies failing to follow up participants. This is particularly important for community based interventions where sociability might be a factor in uptake, performance, and maintenance of exercise. Evidence from this review suggests that exercise interventions compared with usual

activity are effective for improving balance in older people, reflecting some aspects of the Fit as a fiddle (FAAF) intervention implemented as part of CHIP.

Wellbeing in Older People

The review 'PH16' (Windle, et. al., 2008), was a systematic review of 'public health interventions to promote wellbeing in people aged 65 and over'.

The review was conducted by the Centre for Reviews and Dissemination (CRD), searching Cochrane and national library databases for research. Topical websites were also searched. Quantitative and qualitative data were assessed for methodological quality using NICE methodology checklists.

The authors identified 248 articles (218 were studies of effectiveness, 30 were cost effectiveness studies), of which 97 were included in the review. A wide range of intervention types including mixed exercise (a combination of aerobic and strength/toning activities), tai-chi, gardening, computer use and volunteering (among others) was included. The authors stated that the quality of evidence was generally poor, with more methodologically poor than good studies. A narrative summary was conducted due to heterogeneity. Where possible, fixed effects models were run to compare effect sizes. The authors clearly and concisely described their methods and the studies are from a variety of countries, though all studies had to have been published in English. The PRISMA statement was adhered to but at times lacked detailed explanation.

There were some limitations to this generally well conducted review. A lack of inclusion of non-English studies may have excluded relevant well-conducted studies (language- publication bias). An amalgamation of poor mental health and positive mental health results made it difficult to discern whether studies examined mental wellbeing, or lack of (or reduction in) poor mental health and whether there was a

difference. The interpretation of study findings reflected an emphasis on efficacy rather than effectiveness, for example in the critique of participants who were motivated to attend or who attended as a result of community advertisements. This does not necessarily reduce the quality of the study (though it does present self-selection bias), it reflects instead the pragmatic nature of community based interventions with few other alternatives to recruitment. It also introduces the issue of whether or not it is ethically appropriate to recruit those who are not motivated to attend in the first place. Further, it does not seem logical to test an intervention on a group of individuals who do not wish to take part, when interventions implemented in practice would most likely be offered to persons motivated to attend. However from a methodological standpoint the review appears of good quality, and points out considerable homogeneity in the population attending study interventions, who were not on the whole, from minority backgrounds (by ethnicity or sexual orientation).

The evidence suggests that 'mixed exercise' programmes have 'small to moderate effects' resulting from interventions of 'moderate intensity' on mental well-being. No conclusions were drawn on optimal duration or frequency of intervention sessions, due to the wide range of frequency and duration across studies. Strength and resistance exercise also demonstrated small to moderate improvements in physical functioning and mental wellbeing. These findings mirror those from the study by Shaw and colleagues (Shaw et. al., 2009), which extend beyond physical functioning to directly address aspects of positive mental health and wellbeing.

This review relates directly to the FAAF intervention evaluated in this study. FAAF follows the recommended practice from PH16 guidelines for designing and implementing community-based interventions to improve physical, social and emotional wellbeing in older people.

Key messages identified using the RE-AIM framework for physical activity interventions

Reach: Intensive, relatively small exercise interventions do not characteristically have a wide population reach. It is important that the targeted population is continuously supported and efforts are made to retain participants throughout the exercise intervention. Efforts should be taken to remove barriers to accessing the intervention. Efforts should also be made to appeal to both men and women to improve reach.

Efficacy/Effectiveness: Weight loss interventions using a 'prescription' based approach were an effective way to increase exercise that resulted in weight loss and weight management at the individual level. For improving balance in older people, indirect measures such as the Functional Reach Test, the Berg Balance Scale, or the timed up and go test, proved successful in demonstrating effectiveness. Importantly, they are cheap and easy to use which is relevant for public health improvement initiatives in community settings where cost and delivery mechanisms pose challenges to implementation. Further evidence from the PH16 NICE review found that mixed exercise and strength and balance interventions were also moderately effective in improving aspects of mental wellbeing.

Adoption: Targeting exercise to high risk groups of the population resulted in better outcomes than community wide approaches. If interventions delivered in communities are to be equitable and health inequalities reduced, every effort must be made so that referrals and settings delivering the interventions are not clustered in certain areas, but occur throughout the city.

Implementation: Piloting interventions is a useful strategy for 'working out the kinks' before full project implementation occurs. It is particularly useful for community based interventions because of practical challenges related to

participants (barriers to access, take-up and follow through) and staff (Staff knowledge and comfort level with intervention, familiarity and use of outcome measures, workload capacity and managerial and technical support).

Maintenance: The reviews of targeted exercise interventions did not show sufficient evidence of long term maintenance. This is mainly due to lack of follow up of the participants after the intervention ended. Evaluating exercise interventions over longer periods of time is necessary to determine long term effectiveness of both short and long term interventions.

Summary

This rapid review aimed to identify whether the interventions commissioned by CHIP were supported by good available evidence. For these selected projects, I found evidence to support Alcohol, OBOL, and FAAF interventions. I found less direct evidence to support the WBM intervention, but the evidence suggested that the principles behind this type of intervention might improve the mental wellbeing of those participants involved.

In this section, I have reviewed reviews of evidence available on the types of interventions I evaluate in my study. In the following sections of this chapter, I describe the methods I used to evaluate CHIP interventions and I describe the results.

6.3 METHODS

In the following sections I describe my methods of my before and after evaluation.

6.4 STUDY SETTING

The study took place in the city of Coventry, West Midlands, England (see background Chapter 2 for further details on this setting).

6.5 STUDY DESIGN

Each evaluation was carried out using a quasi-experimental before and after design to evaluate the impact of interventions using a measure of mental wellbeing as an outcome measure.

6.6 SAMPLE SIZE CALCULATION

I estimated the sample size needed for each outcome evaluation in order to demonstrate a significant and clinically important change in mental wellbeing. I based my estimations on data from health interventions using WEMWBS as a before and after outcome measure with similar times between testing as the interventions in my study: 6 weeks and 12 weeks. I used a mean change in WEMWBS score for the 6 week follow up of 6 (95% CI 4.8-7.2, SD 0.61) and the 12 week follow up of 7 (95%CI 6.0-8.0, SD 0.51) to estimate the sample size (Maheswaran et. al., 2012). I used the sample size software G*Power (Erdfelder, Faul, and Buchner, 1996) to estimate the sample size with $\alpha = 0.05$, 90% power and a moderate effect size (0.5) for paired t-tests. Using only power, alpha level and effect size, the estimated sample size was 44 cases. A more precise calculation using change in mean before and after scores and SD of the difference, (holding the alpha level and power constant) resulted in an estimated sample size of 3 cases.

While the variation in sample size calculations is large, Maheswaran and colleagues report that WEMWBS responsiveness to change was independent of the type of intervention and the sample size (2012). Due to the high likelihood of participant attrition (estimated by one project lead as high as 70% loss to follow-up), I requested that intervention leaders collect evaluation data for 100 cases, expecting that valid data would be achieved at all time-points in at least 30 individuals in each intervention.

6.7 ETHICAL APPROVAL

Ethical approval was obtained from the University of Warwick Biomedical Research Ethics Committee 16 June 2011 for this phase of research (Appendix 14).

6.8 PROCEDURE

For each intervention evaluation I followed the same general protocol. Intervention-specific details and procedures are described in sections 6.8.1 to 6.8.4.

Initial intervention inclusion was requested and secured via the CHIP programme manager. I met face to face with project and intervention managers and together we discussed the purpose and appropriateness of the mental wellbeing evaluation for their intervention, the logistics and practicalities of data collection and the duties and responsibilities of implementation staff. Proposed evaluation materials were adapted based on intervention specific conditions discussed in the meeting. Draft materials were then electronically mailed to the intervention managers and included the following:

- Evaluation outcome measure: WEMWBS template for each collection time point
- Consent forms
- Evaluation flow-chart to aid the implementation protocol
- Contact details of researcher/myself for evaluation support

Suggested adaptations to the evaluation materials were made in agreement with the intervention manager after which the intervention evaluation commenced.

6.8.1 Alcohol - specific procedure

The Structured Day Care (SDC) intervention consisted of self-referred, group-based, twelve step-focused therapy conducted on a daily basis over twelve weeks. The Alcohol Treatment Requirement (ATR) intervention consisted of court ordered, one to one counselling therapy for problematic alcohol consumption among people referred and assessed for alcohol misuse while under incarceration. The ATR commenced upon release, as a condition of probation.

The aim of the evaluation was to describe any effect of the ATR or SDC intervention on mental wellbeing of the participants. All eligible service users were approached for participation for an 8 month period (based on inclusion/exclusion criteria stated in section 6.5.1). A sample size goal of 100 participants was aimed for based on the sample size calculation. Intervention staff were instructed to guide participant completion of WEMWBS at four time-points.

At an individual's first treatment session information about the CHIP evaluation was given and consent to participate was requested from each individual. If consent was given WEMWBS was completed at the first, middle and second to last (ATR) and last (SDC) sessions. Six weeks after treatment finished, a follow up WEMWBS was conducted. In ATR the length of time this took depended on the service user's treatment plan ranging from 6 months to 3 years. The consent form included the

participant name and allocated ID number. Upon completion it was detached from the WEMWBS forms, which contained the ID number but not the name of the participant. Anonymised data were submitted to the researcher, identified by client ID number only.

6.8.2 Wellbeing Mentors - specific procedure

As part of the Healthy Schools project, 'Wellbeing Mentors' (referred to as WBM or mentors) were embedded in eight secondary schools across Coventry and work commenced beginning in the second quarter of 2010, with the programme completing at the end of 2012. The schools electing to participate did so after being invited by the project manager based on their knowledge of the schools' involvement in prior or potential wellbeing promotion activity.

The aim of the WBM role was to identify support for pupils who may have health related barriers to learning in school. Specific aims included: to build greater resilience in pupils by focusing on healthy lifestyle promotion; to mediate and 'signpost' pupils, and in some cases their families, to professionals and partner agencies depending on need; to identify pupils 'at risk' of low educational attainment earlier; and to be embedded within schools to better support pupils experiencing health related difficulties (e.g. physical, mental, emotional health problems, family problems). Pupils were referred to Wellbeing Mentors via teachers or teaching support staff. There was no standardised procedure across schools for identification of pupils 'at risk' and referral of pupils to WBM. The intervention was delivered by mentors via one on one mentoring sessions over 6 weeks at one session per week. All mentors were trained by the Local Authority before commencing their role in schools and participated in on-going regular meetings with a Wellbeing Mentors Project Manager where new training was conducted and progress reviewed. These

meetings were conducted as a group with all mentors encouraged to attend group meetings. Mentors also maintained individual weekly contact with the Project Manager.

The aim of this evaluation was to describe any effect of targeted school counselling or 'Wellbeing Mentorship' on mental wellbeing in children with health related barriers to learning and at risk of low educational attainment and attendance. In an introductory meeting and in partial fulfilment of their role with the Healthy Schools CHIP project, Mentors were asked to evaluate the mental wellbeing of their pupils using WEMWBS in March 2011. In this meeting general and specific aspects of WEMWBS were discussed: WEMWBS' origins and theory, the validation population of young people, its comparison to the Strengths and Difficulties Questionnaire (SDQ) (Goodman et. al., 1998, Goodman, 2001) which is often used in educational surveys to identify lack of psychological well-being, and the logistics of conducting the evaluation (see Appendix 7 for evaluation materials). It was agreed at this point that mentors would begin using WEMWBS for the next 20 pupils they saw who met the inclusion criteria. Any questions or queries about the evaluation were to be directed to their Project Manager or me.

As with the other projects, evaluation design was a quasi-experimental before and after intervention. The target sample size was 100 participants who completed WEMWBS at three time-points: baseline, mentoring completion at 6 weeks, and 10-12 week follow up to assess the impact of the intervention on mental wellbeing. The sample size target for this evaluation was estimated based on previously reported numbers of mentees per term, anticipating a maximum return of 160 evaluations or approximately twenty pupils per school and superseding the calculated sample size. An evaluation design figure is in Appendix 8.

As part of the evaluation, the mentors assessed suitability for completing WEMWBS (Appendix 9). For pupils the consent process was as follows: Mentors were instructed to verify that a pupil was at least 13 years of age, that the pupil knew their information would be kept confidential, that mentoring sessions would run for longer than 2 weeks, and that they didn't have to complete WEMWBS if they didn't want to. If a pupil met those criteria, the mentor administered the WEMWBS before commencing the first mentoring session, at the start of the last session, and 6 weeks after the completion of the last mentoring session.

6.8.3 One Body One Life - specific procedure

As part of the Healthy Weight project, One Body, One Life (OBOL) was a 10 to 12 week intervention designed to create behaviour change through education and activity sessions for any age group and for families.

Course content was delivered by qualified coaches using a behavioural approach to change, with an 'emphasis on being fun and interactive'. Content included a 45 minute exercise session, which focused on gently improving fitness using a variety of activities: basketball, netball, football, rounders and dance and Tai Chi, a weekly 45 minute workshop on healthy eating which included 'healthy eating tips and demonstrations', health checks, and motivational coaching to improve expectations and identify readiness for change (Towey, Harrell and Lee, 2011). Participants were recruited from the wider community of Coventry, using advertisements in local neighbourhoods, and specifically targeting recruitment efforts to more deprived areas ('priority neighbourhoods') in Coventry, an approach consistent with the 'improving health and reducing inequalities' strategy.

The aim of this evaluation was to describe the effect of the health improvement intervention 'One Body, One Life' on mental wellbeing in participants. The target

sample size was 100 participants who completed WEMWBS at three time-points to assess the impact of the intervention on mental wellbeing, collected at the baseline, 10-12 weeks (the completion of the intervention) and a three month follow up. An evaluation design figure is in Appendix 8. WEMWBS was incorporated into an already existing questionnaire concerning behaviours and attitudes relating to physical activity, healthy eating habits, general wellbeing and standard demographic questions. Participants consented to complete a 'health assessment' in which WEMWBS was embedded as part of OBOL.

6.8.4 Fit as a Fiddle - specific procedure

The Fit as a Fiddle (FAAF) intervention comprised 'light exercise' in a social group for people 55+. The light exercise included chair-based exercise, tai-chi, and strength, balance and flexibility exercises, often to music.

The Intervention was delivered at multiple community leisure centres and church locations throughout Coventry. The FAAF intervention was delivered by staff and volunteers of a national charity for older people. Potential participants were recruited by the charity, from city wide and local community advertising, word-of-mouth via the charity, and partners working with the charity from other areas of work. FAAF was designed to address three main issues: increase physical activity levels in older people, reduce social isolation, and improve general wellbeing of the participants.

The aim of the evaluation was to identify potential associations between participation in 'Fit as a Fiddle' and mental wellbeing. Mental wellbeing was evaluated using WEMWBS. WEMWBS was incorporated into an already existing questionnaire concerning behaviours and attitudes relating to the exercise class itself. The questionnaire addressed weekly physical activity, average daily fruit and

vegetable consumption, physical functionality/mobility, general wellbeing, reason for attendance, age and gender. Questionnaires were completed on the 2nd, 6th and 12th weeks of class, and 3 months post intervention to follow up change. The exercise instructors delivered the class, administered and collected the questionnaires from participants and submitted them to the Delivery/intervention Manager. The target sample size was 100 participants who completed WEMWBS at the three time-points. Completed questionnaires were collated by ID number, copied, and submitted to me for data entry. An evaluation design figure is in Appendix 8.

6.8.5 EVALUATION QUESTIONS

The following questions were addressed in each CHIP intervention evaluated.

1. Did mental wellbeing improve for participants active in each intervention?
2. How do the intervention WEMWBS scores compare with wellbeing scores for the larger population of Coventry?

6.9 DATA COLLECTION

Data collection took place in each intervention from Spring 2011 to Spring 2012. WEMWBS data were collected in accordance with the 2008 WEMWBS User Guide and completed by the participants themselves (Stewart-Brown, Janmohamed, Parkinson, 2008).

Alcohol

Data collection commenced May 2011 and was completed February 2012. When data collection was completed, the consent forms were detached and hard copy questionnaires were collated and submitted to me.

Wellbeing Mentors

Data collection commenced in March 2011 and was completed in February 2012. Pupils in the WBM intervention had the support of the Wellbeing Mentors to help them complete the questionnaire if they did not understand some of the terms. Completed WEMWBS were sealed in an envelope and delivered to me upon completion of the follow up WEMWBS form.

One Body One Life

Data collection by OBOL team members commenced in April 2011 and was completed collection in April 2012. Data were electronically entered by a member of the OBOL team and the collated data were sent to me in an anonymised excel spread sheet.

Fit as a Fiddle

Data collection commenced in May 2011 and was completed in January 2012 in two FAAF classes. Copies of the original forms were sealed in envelopes and sent to me for data analysis. The original forms were maintained by FAAF staff.

6.9.1 Measures

In the Alcohol, OBOL, and FAAF interventions WEMWBS was incorporated into an existing questionnaire. In the Wellbeing Mentors intervention WEMWBS was used as a stand-alone scale. Appendix 10 presents the questionnaire forms used in each intervention evaluation.

6.10 DATA ANALYSIS

6.10.1 Descriptive statistics

Descriptive analysis was undertaken using means and standard deviations for the continuous dependent variable WEMWBS for each intervention. Frequencies and

percentages were used for the categorical variables assessed. Exploratory analysis was conducted to assess the distribution of WEMWBS scores for each intervention dataset and assess status of normality.

6.10.2 Inferential statistics

Outcome data were analysed to identify change over time, whether any change was statistically significant, and the effect size of the change. Building on the responsiveness to change in WEMWBS work by Maheswaran (2012), I evaluated the extent of statistically and 'clinically important changes' (Crosby, Kolotkin, & Williams, 2003) in WEMWBS scores. Clinically important/meaningful changes have been described as improvement in function and in health-related quality of life (Crosby, Kolotkin, & Williams, 2003).

I used paired t-tests for parametric data and Wilcoxon's signed-rank test for nonparametric data analysis. Where appropriate and where statistical assumptions were met I used analysis of variance (ANOVA) to identify between and within group differences.

I analysed the data for evidence of Regression to the Mean (RTM). Regression to the mean is a statistical phenomenon whereby 'unusually large or small measurements tend to be followed by measurements closer to the mean' (Barnett, Van Der Pols, & Dobson, A, 2005, p 215). I did this in order to adjust any 'inflated' mean scores. I accounted for this phenomenon by conducting an analysis of covariance (ANCOVA) and defining baseline WEMWBS score as the covariate and the completion and follow up WEMWBS scores respectively as dependent variables to test for RTM (Vickers & Altman, 2001).

6.11 RESULTS

6.11.1 Alcohol

The Alcohol Treatment Requirement (ATR) and Structured Day Care (SDC) interventions did not collect a sufficient number of complete participant data for the results to be analysed. See Chapter 8 for an examination of this issue.

6.11.2 Wellbeing mentors (WBM)

Participant statistics

Ninety-six pupils (96) of 160 (60%) estimated participants completed WEMWBS within the time period of April 2011 to February 2012 (Table 18). The number of returns varied widely between schools. The age of participants was evenly spread with the exception of 16 year olds (2%). A quarter of participants were 11 or 12 (23%) and were excluded from the analysis. Just over half of the participants were 13 and 14 (52%), and another quarter were 15. The majority of participants were girls (70%).

Table 18: Return and response rate by school

School	Number of returns	Response rate (%)
School 1	17	85
School 2	7	35
School 3	7	35
School 4	12	60
School 5	20	100
School 6	16	80
School 7	13	65
School 8	4	20

Table 19: Pupil Characteristics at each time point			
Pupil Characteristics	**Baseline N (%)**	**Completion N (%)**	**Follow up N (%)**
Age Group			
11-12	21 (24%)	21 (25%)	20 (23%)
13-14	46 (52%)	41 (49%)	44 (50%)
15-16	21 (24%)	21 (25%)	24 (27%)
Gender			
male	28 (32%)	27 (32%)	28 (32%)
female	60 (68%)	56 (68%)	60 (68%)

Inferential statistics

I examined the difference in mean WEMWBS scores between time points (baseline= T1, completion at 6 weeks= T2, follow up 10 weeks after completion= T3) to identify the normality of the distribution of the difference. I used histograms, normal Q-Q plots, observed values outliers and the Kolmogorov-Smirnov test to determine the normality of each distribution. Normal distributions were observed for the difference between T2-T1 (Kolmogorov-Smirnov p= .200) and T3-T1 (p=.200). I found that the difference between T3 and T2 could be interpreted either way (Kolmogorov-Smirnov p=.008) depending on my use of the central limit theorem, but to be conservative and reduce the likelihood of a type I error, I used a non-parametric test statistic, Wilcoxon's signed-rank test (Z) to identify significant differences in WEMWBS scores by time points.

Change over course of the intervention

Pupils' mental wellbeing significantly improved (at the 95% confidence level) from baseline to completion, from completion to follow up, and from baseline to follow up. The tables below show first the mean WEMWBS scores and standard deviations at each time point, and second the magnitude and direction of change in WEMWBS score between time-points (Z-score and T statistic), the significance level of the

change, and the size of effect. I calculated the effect size for the change between time-points (Z/√N) suggested by Field (2005).

Table 20: Mean WEMWBS scores and SD for each time-point		
Single time-point measures	**n**	**Mean (SD)**
T1 (Baseline)	67	43.1 (12.2)
T2 (Completion)	62	48.7 (9.7)
T3 (Follow up)	68	53.8 (9.4)

Table 21: Change in WEMWBS scores between intervention time points					
time-points	**N (pairs)**	**Z-score***	**T***	**Sig. P-value**	**Effect size**
T2-T1	59	-4.56	22.21	P<.001	0.42
T3-T2	60	-4.18	28.73	P<.001	0.38
T3-T1	63	-5.88	16.61	P<.001	0.52

*based on negative ranks

I found for each time point there were consistently more positive ranks than negative ranks[9] (T= the lowest mean negative rank) demonstrating an increase in WEMWBS scores between time points. This trend was significant for the change between each time point, demonstrating a moderate effect size for the change between baseline and completion (0.41), a smaller effect for change from completion to follow up (0.38) and a large effect for the change overall between baseline and follow up (0.52).

The changes between baseline and completion mentoring sessions also demonstrated 'clinically meaningful' increases in mean WEMWBS scores. Suggested in the literature as between 3 and 8 WEMWBS points, these findings fall within those margins (using paired t-tests, not shown) (Maheswaran et. al., 2012).

Regression to the mean

Adjusting completion and follow up scores for baseline score using analysis of covariance (ANCOVA) attenuated the intervention effect to a small degree. Table 22 shows the time-point sample size, standard deviation and the unadjusted mean

[9] Note that the Z-Score does not reflect changes in WEMWBS score units.

WEMWBS score and the regression to the mean (RTM) adjusted mean WEMWBS score. There is a small attenuation in mean WEMWBS scores at completion and follow up time-points, demonstrating that the initial scores may have been more extreme at baseline, thereby reflecting a bigger change over time than observed after adjustment.

Table 22: Unadjusted and RTM- adjusted WEMWBS scores				
Time point	**N pairs**	**SD**	**Unadjusted**	**RTM-Adjusted**
Baseline	67	12.1	43.1	Covariate
Completion	59	9.7	48.7	48.6
Follow up	63	8.9	53.8	53.3

Summary of findings

WEMWBS scores increased significantly among pupils completing the intervention from baseline to completion (88% of pupils completed). This effect was smaller from completion to follow up but again significantly increased. The largest effect was observed between baseline and the 10 week after completion follow up (94% completed). Pupils completing the intervention showed mean improvements in their wellbeing at each collection time-point demonstrating that mental wellbeing continued to improve even after the intervention stopped. Adjusting for regression to the mean partially attenuated this effect for completion and follow up scores, but did not eliminate statistical significance and these changes remained clinically meaningful.

There were no observed significant differences between baseline, completion and follow up groups in terms of age or gender, and the completion rates were relatively high compared to other differential dropout rates in the other evaluations. Adjustment for regression to the mean with no major resulting change to the outcome, large effect sizes, and a variety of schools which demonstrate trends in

the same positive direction reflect factors which lend credence to the feasibility that this intervention may contribute to increasing levels of mental wellbeing in these age groups, nevertheless not being able to conclude that it is efficacious.

This study was limited by selection bias - unverifiable differences between pupils completing the intervention and those who did not. It is possible that those completing the intervention had inherently better wellbeing to begin with, and those who did not complete the intervention had inherently worse wellbeing. It could also have been that there was an unknown differential between intervention-completing and non-completing pupils, albeit unknown to observers. For example, personality characteristics common to completers may have been different to those of non-completers, where completers were characterised by personalities more amenable to change.

Further, there may have been personality differences which prompted referral in the first place, excluding some pupils from the intervention who may have otherwise benefitted.

6.11.3 One Body One Life

Participant characteristics

The majority of participants were women (81%) with a total of 586 participants completing some record of participation and 481 who had valid WEMWBS data at baseline (82%), 307 at completion (52%) and 121 at the 3 month follow up (21%). A quarter of participants were aged 35 to 44, around a fifth were 25-34 and one sixth were 45-54. The remaining age categories were fairly evenly distributed around 10% in each category.

Table 23: OBOL Participant characteristics				
Participant characteristics	**N (%) total**	**N valid @ baseline (%)**	**N valid @ OBOL Completion (%)**	**N valid @ OBOL 3 month follow up (%)**
Total	586	481	307	121
Gender				
Men	113 (19%)	85 (18%)	58 (19%)	18 (15%)
Women	473 (81%)	396 (82%)	249 (81%)	103 (85%)
Age	584			
16-24	65 (11%)	54 (11%)	26 (9%)	10 (8%)
25-34	108 (18%)	92 (19%)	56 (18%)	22 (18%)
35-44	151 (26%)	129 (27%)	84 (27%)	39 (32%)
45-54	92 (16%)	75 (16%)	45 (15%)	14 (12%)
55-64	63 (11%)	51 (11%)	38 (12%)	17 (14%)
65-74	55 (9%)	42 (9%)	32 (10%)	10 (8%)
75+	50 (9%)	38 (8%)	26 (9%)	9 (7%)
Ethnicity	586			
White	377 (64%)	324 (71%)	208 (71%)	83 (72%)
Asian	103 (18%)	82 (18%)	54 (18%)	24 (21%)
Black	37 (6%)	27 (6%)	19 (7%)	4 (4%)
Mixed	19 (3%)	17 (4%)	10 (4%)	3 (3%)
Other/Not Given	50 (9%)	7 (2%)	3 (1%)	2 (2%)

There was considerable loss to follow up at the completion of the intervention and the 3 month follow up. I tested for differences to determine the size of any differences between time points within participant characteristic groups. I dichotomised category values to reduce the likelihood of committing a type II error (failure to reject a false null hypothesis). I compared baseline to completion, completion to follow up and baseline to follow up using a chi square test for proportional differences with Yates' correction. I found that there were no significant statistical differences between groups compared between time points suggesting that the participant characteristics were sufficiently similar despite losses to follow up (Table 24).

Table 24: Chi square with yate's correction			
Variable	Baseline to completion (p value)	Completion to follow up (p value)	Baseline to follow up (p value)
Gender (men v women)	0.73	0.40	0.55
Age (≤54 v ≥55)	0.061	0.48	0.66
Ethnicity	0.96	0.96	0.98

Health behaviour variables (independent variables)

The independent variables moderate physical activity >30 minutes (times per week), walking> 30 minutes (times per week) and daily portions of fruit and vegetable consumption were collected alongside WEMWBS. Means for each time-point are presented for the start of OBOL (Baseline), the finish (Completion) and the 3 month follow up (Follow up @ 3 months).

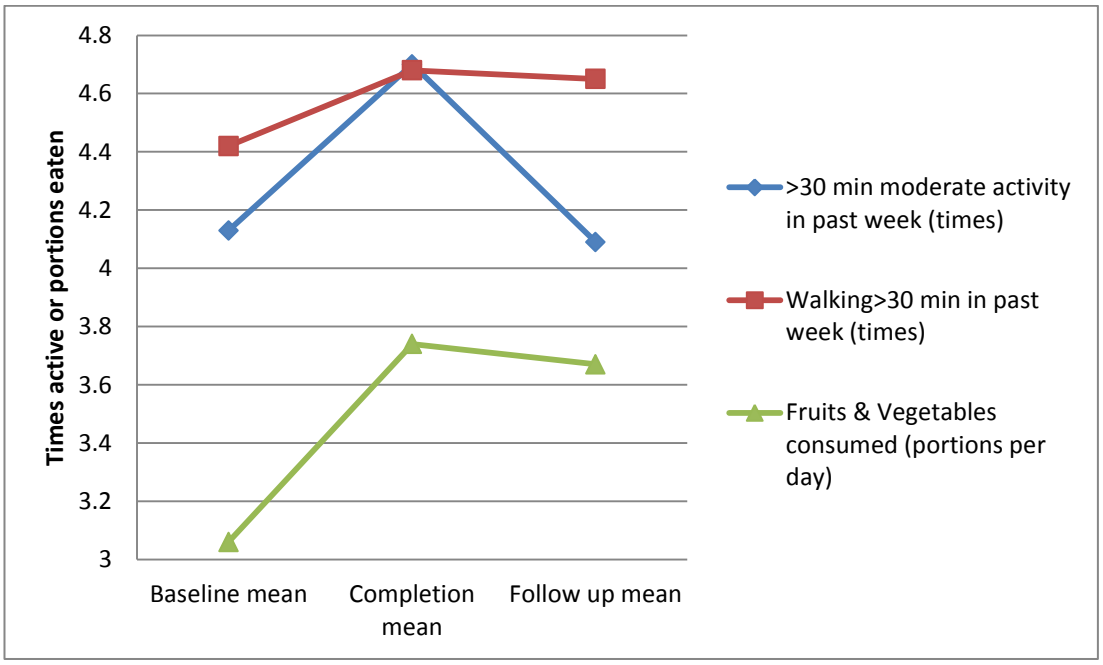
Table 25: Health behaviour variables by OBOL time-point			
Variable	Baseline mean (SD)	Completion mean (SD)	Follow up mean (SD)
>30 min moderate activity in past week (times)	4.13 (2.0)	4.70 (1.8)	4.09 (2.0)
Walking>30 min in past week (times)	4.42 (2.1)	4.68 (2.0)	4.65 (2.1)
Fruit & Vegetables, (portions per day)	3.06 (1.2)	3.74 (1.1)	3.67 (1.2)

Change in independent variables over time

I tested the significance of changes between time-points for the independent variables. From baseline to completion, there were significant increases in physical activity ($p<.01$) and fruit and vegetable consumption ($p<.01$). From completion to follow up, there was a significant decrease in frequency of physical activity ($p<.01$) and fruit and vegetable consumption showed no further changes ($p=.29$). There were no significant changes in walking behaviour over time. Table 26 illustrates the changes over time. Walking remained fairly constant, while physical activity

increased and then decreased again at the 3 months post intervention follow up. Fruit and vegetable consumption showed an increase from baseline to completion, which was sustained at the post intervention follow up.

Table 26: Change over time in independent variables



Changes in mental wellbeing in OBOL participants

For WEMWBS scores, I examined the distribution of the difference between time-points for normality. I used histograms, normal Q-Q plots, observed values outliers and the Kolmogorov-Smirnov test to determine the normality of each distribution.

The distribution of differences between T2-T1 (baseline, p=.028) and T3-T1 (follow up from baseline, p=.003) were not normally distributed. The distribution of T3-T2 (Completion) was normally distributed (p=.200) therefore nonparametric testing was conducted using Wilcoxon's signed-rank test for repeated measures (Z).

Data were obtained for 481 participants at baseline, 307 at completion, 121 at follow up. Table 27 shows the mean WEMWBS score with standard deviation for each

time-point, followed by the amount of change between time-points and the effect size of that change.

Table 27: Mean WEMWBS scores and SD for each time-point	
Single time-point measures	Mean (SD)
T1 (Baseline)	47.8 (9.8)
T2 (Completion)	52.0 (8.6)
T3 (Follow up)	51.1 (8.1)

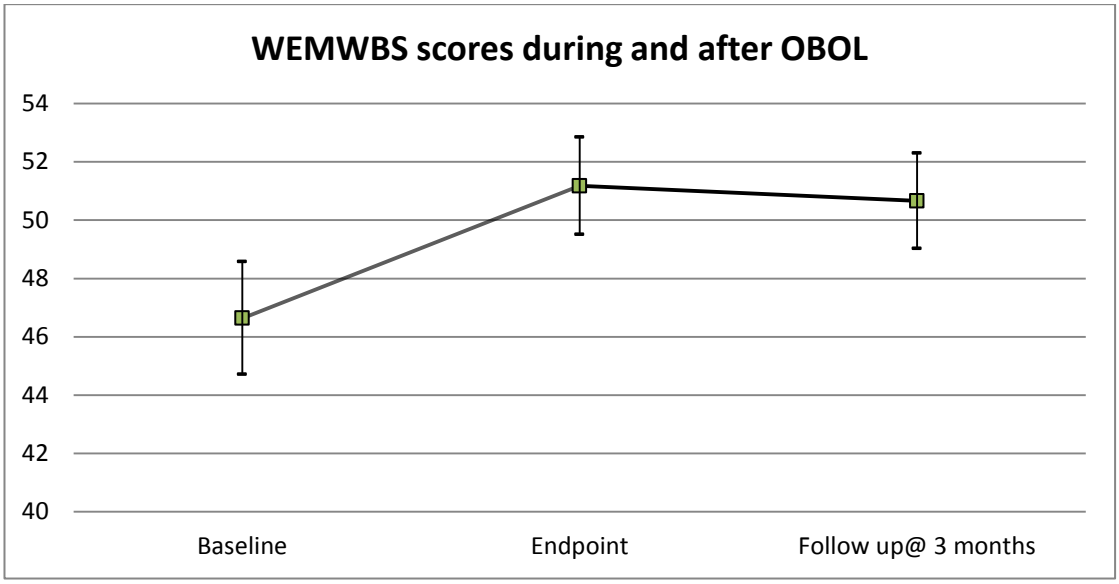
Table 28: Change in WEMWBS scores between intervention time points					
time-points	N (pairs)	Z-score	T statistic (mean low rank)	Significance P-value	Effect size
T2-T1	274	-8.54*	98.56	P<.001	0.37
T3-T2	99	-0.75^	44.26	P=.45	0.05
T3-T1	112	-4.18*	43.19	P<.001	0.28

*based on negative ranks; ^based on positive ranks

Table 28 shows that there were significant increases in WEMWBS scores between baseline (T1) and completion (T2) and baseline and follow up (T3). However, the low mean rank for the change between completion to follow up was positive, meaning that there were more negative ranks than positive ranks (more WEMWBS scores decreased than increased over that period of time). This difference was not statistically significant and demonstrates that between the completion and follow up of OBOL, participants' WEMWBS scores did not significantly change; the change observed from baseline to completion was sustained. The greatest increase in WEMWBS occurred over the course of the intervention, demonstrating a moderate effect size.

Figure 15 illustrates the changes described in the above table. Post-intervention WEMWBS scores remained significantly higher than baseline WEMWBS scores and did not differ significantly from the endpoint/completion WEMWBS score.

Figure 15: OBOL: WEMWBS scores over time



Regression to the mean

Adjusting completion and follow up scores for baseline score using analysis of covariance (using baseline score as the covariate) had no effect on the adjusted mean WEMWBS scores for completion or 3 month follow up.

Correlation between WEMWBS scores and independent variables

I tested for correlations between WEMWBS, physical activity and fruit and vegetable consumption at each time-point using Pearson's r. I found statistically significant correlations (95% confidence level) between baseline mean WEMWBS, physical activity and fruit and vegetable consumption. Completion and follow up mean WEMWBS scores were not significantly correlated with physical activity, walking, or fruit and vegetable consumption.

Physical activity and fruit and vegetable consumption were significantly correlated at baseline ($r=.168$, $p<.01$), completion ($r=.268$, $p<.01$) and follow up ($r=.195$, $p=.049$) time-points.

Correlation between change in WEMWBS scores and change in independent variables

To determine the correlation of the independent variables and WEMWBS over time, I tested for possible correlations between change in WEMWBS, change in physical activity, and change in fruit and vegetable consumption between time-points. I used Pearson's r and, where appropriate, Spearman's rho (r_s) (a more conservative test to detect nonlinear correlations).

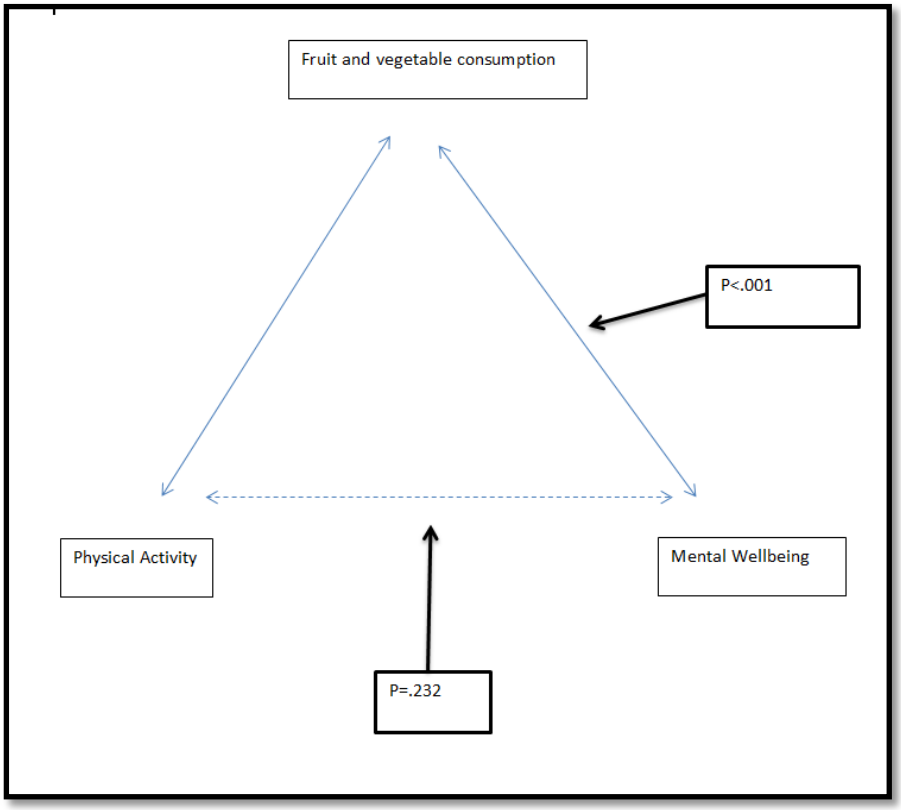
I found that change in WEMWBS score was positively correlated with change in portions of fruit and vegetables consumed (r=.247, r_s=.241) from baseline to completion. This correlation was statistically significant in parametric and non-parametric correlation tests (p<.001). Changes in WEMWBS score and fruit and vegetable consumption from completion to follow up were not significantly correlated in either direction (two-tailed test) (r=.079, p=.443; r_s=.028 p=.786).

I conducted the same tests for correlation for 'physical activity' (number of times per week doing moderate physical activity >30 minutes) and 'walking' (number of times per week walking >30 min). No significant correlations were observed for change in physical activity (r=.079, p=.288) or walking (r=.007, p=.925) and WEMWBS scores between baseline and completion time-points. This lack of effect was also observed for completion to follow up change for physical activity (r=.157, p=.176) and walking (r=.137, p=.228). Spearman's rho was also non-significant.

In light of this finding, I re-examined the correlation between WEMWBS score and physical activity at baseline (when all three variables were correlated). I conducted two ANOVA tests. First I tested whether physical activity as a fixed factor 'predicted' mental wellbeing levels, second I tested for any changes in the relationship with fruit and vegetable consumption as a covariate. Test one resulted in a borderline significant association between more frequent physical activity and higher mental

wellbeing levels (p=.049). Test two showed physical activity no longer significantly contributed to the variation explained (p=.276) and fruit and vegetable consumption showed a significant contribution (p=.001). This result suggests fruit and vegetable consumption may moderate the relationship observed between physical activity and mental wellbeing at baseline (Figure 16).

Figure 16: Illustration of moderated relationship



Summary of findings

Over three hundred people completed WEMWBS at the end of OBOL (64% of those who completed the baseline measure). Between baseline and completion OBOL sessions, there were meaningful and statistically significant improvements in WEMWBS scores among participants completing OBOL. Adjusting for regression to the mean showed no effect on this outcome. WEMWBS scores at the 3 month follow up were sustained.

There was a significant correlation between increases in WEMWBS scores and increases in fruit and vegetable consumption from baseline to completion. This effect was not observed for the changes in physical activity between time-points. When I examined this phenomenon more closely, I discovered that fruit and vegetable consumption appeared to moderate the relationship between physical activity and mental wellbeing at the baseline WEMWBS measure, the only point at which physical activity and mental wellbeing were correlated. A 'moderator' variable affects the strength of an association between two other variables when all are correlated, but is not on the causal pathway (a mediator variable) (Baron & Kenny, 1986).

Physical activity did not show the same pattern between time-points as fruit and vegetable consumption. The frequency of physical activity decreased significantly between completing the intervention and the follow up three months later. In the same time, fruit and vegetable consumption showed increases in number of portions consumed from baseline to completion, and this level of consumption was sustained from completion to follow up.

Overall, fruit and vegetable consumption demonstrates a strong positive relationship with mental wellbeing and significantly increased over the course of the intervention. Although for those participants who stayed in the intervention I observed a significant effect between participating in OBOL and increases in physical activity, this effect was not sustained at the follow up and was not associated with mental wellbeing. This suggests that, in this intervention, the mechanisms by which physical activity increases might be independent of the mechanisms increasing mental wellbeing and fruit and vegetable consumption.

There was considerable loss to follow up at the completion of the intervention and the 3 month follow up. The dichotomisation of participant characteristics and

comparison of baseline to completion, and completion to follow up proportional differences showed that these differences were small and non-significant, but it is likely that there may be a differential loss to follow up causing other unobserved differences between non-participants, non-completing participants, and completing participants might be playing a role. I discuss these issues in detail at the end of this chapter.

6.11.4 Fit as a Fiddle

Participant characteristics

There were 39 participants with valid WEMWBS scores at each data collection time point, of a possible 42 participants (93% completion rate). Most participants were older with 78% of the participants over 75 years of age. The majority of participants were women (81%). All but one participant reported they were White British (98%).

Table 29: FAAF participant characteristics	
Characteristic	N (%)
Total sample	
Gender	
Men	8 (19%)
Women	34 (81%)
Age	
55-64	2 (5%)
65-74	7 (17%)
75-84	15 (37%)
85+	17 (41%)
Ethnicity	
White British	41 (98%)
Asian & Asian British	1 (2%)

I examined the distribution of the difference between time-points for normality. I used histograms, normal Q-Q plots, observed values outliers and the Kolmogorov-Smirnov test to determine the normality of each distribution. All three distributions of the differences suggested nonparametric distributions: T2-T1 (baseline to 6 weeks,

p<.001), T3-T2 (6 weeks to 12 weeks p=.005) and T3-T1 (baseline to 12 weeks p=.015). I therefore used Wilcoxon's signed-rank test for nonparametric repeated measures, reporting z-scores and T statistic to demonstrate magnitude of change (Table 31). I collected data on walking activity and flexibility, but I did not conduct any sub-group analyses.

The mean WEMWBS score among all participants was 41.6 when starting FAAF; this increased to 42 points after 6 weeks of classes and increased again to 45.7 after 12 weeks of FAAF classes. Table 30 shows the mean WEMWBS scores and standard deviations, followed by Table 31 showing change in WEMWBS scores between time points and effect size for each change.

Table 30: Mean WEMWBS scores and SD for each time-point	
Single time-point measures	Mean (SD)
T1 (Baseline)	41.6 (9.7)
T2 (6 weeks of intervention)	42.0 (8.5)
T3 (12 weeks of intervention)	45.7 (10.8)

Table 31: Change in WEMWBS scores between intervention time points					
Change between time-points	N (pairs)	z-score*	T statistic (mean low rank)	Sig. P-value	Effect size
T2-T1	40	-2.32	21.64	P<.05	0.26
T3-T2	38	-3.26	14.00	P<.001	0.37
T3-T1	39	-3.88	10.81	P<.001	0.44

*based on negative ranks

These differences in WEMWBS scores over time in FAAF participants show statistically significant increases between each time-point. All three time-points demonstrate a greater proportion of positive ranks than negative ranks. There was a small effect size from baseline to 6 weeks and a larger, moderate effect observed from 6 weeks to 12 weeks, with the largest effect seen between baseline and 12 weeks. Clinically meaningful improvements in mental wellbeing were demonstrated in the change between 6 weeks and 12 weeks, and from baseline to 12 weeks, but

change from baseline to 6 weeks showed no clinically meaningful changes (measured using paired t-tests, not shown).

Regression to the mean

Adjusting completion and follow up scores for baseline score using analysis of covariance did not demonstrate any change in mean WEMWBS score or SD.

Correlations between WEMWBS score and physical activity

There were no statistically significant increases in levels of exercise of participants reported before starting the class and at the 12 week follow up (Z=-.067, p=.947). Data were not collected at 6 weeks for these variables. There was a significant increase in the number of times participants walked >30minutes between baseline and 12 week follow up (z=-2.61, p=.009). However increases in walking were not significantly correlated with increases in mental wellbeing in parametric (r=.155, p=.501) or non-parametric tests (r_s=.218, p=.342). There were insufficient data collected on fruit and vegetable consumption in the baseline measure (n=5) questionnaire to test whether changes over time were correlated with mental wellbeing.

Summary of findings

Thirty-nine of forty-two (93%) participants completed WEMWBS in the FAAF intervention in Coventry. Mental wellbeing improved over time among FAAF participants who participated up to 12 weeks and these improvements were clinically meaningful with a moderate effect size. There were no significant increases in reported 'exercise' during this time-period, however there were significant increases in reported walking frequency. The increase in walking frequency was not correlated with the increase in mental wellbeing.

While there is a very small loss to follow up in this evaluation, little is known about the overall denominator of all FAAF classes that operated. This will be discussed in the chapter discussion.

6.12 CHAPTER DISCUSSION

I described review-level evidence on the subjects and interventions evaluated in this study: Alcohol: ATR and SDC, Wellbeing Mentors, and Physical Activity: OBOL and FAAF. I found evidence supporting both types of treatment used in the Alcohol project, little evidence to directly support the Wellbeing Mentors intervention (but good evidence to support the principles behind such a project), good evidence supporting physical activity interventions targeted to specific settings which include both diet and exercise components, and good evidence to support some components of Fit as a Fiddle-type interventions.

Three of the five interventions I evaluated collected sufficient data on the mental wellbeing of CHIP intervention participants at baseline (n=590). These interventions showed effects on mental wellbeing among three different age groups: Young people aged 13 to 16, a family population from 16 to >65, and an older population aged 55 and older.

Among the family intervention population (OBOL) data on health and lifestyle behaviours were collected in parallel and there were associations between increases in mental wellbeing and increases in fruit and vegetable consumption. This effect was not observed for physical activity which was also measured and was the primary outcome of the intervention. The results suggest that fruit and vegetable consumption may moderate the effect of physical activity on mental wellbeing in a multi-component intervention setting (an intervention with more than one expected mechanism of change).

This apparent relationship between mental wellbeing, fruit and vegetable consumption, and physical activity in OBOL relationship is supported by others' findings (Jacka et. al., 2012; White, Horwath, Conner, 2013).

Further support of this relationship may come from a 1998 study examining the association between F&V consumption and socio-demographic factors among women participating in a national health improvement programme for economically deprived families in the USA (Havas et. al., 1998). The authors found little correlation between socio-demographic factors measured and F&V intake, but did find associations between improvements in self-efficacy (an important aspect of mental wellbeing) and increased F&V intake, providing further support that F&V consumption is not only related to, but may be instrumental in improving the mental wellbeing of individuals (Havas et. al., 1998).

6.12.1 Strengths & limitations

This chapter illustrates some of the benefits and challenges of 'real-world' public health. It is pragmatic, with the evaluations designed to maximise the likelihood of evaluation participation and fidelity.

In my review of the evidence of effectiveness of the selected CHIP interventions, I used the targeted, rapid review method to identify literature. This strategy is both a strength and a weakness; it provides a good standard of evidence from related interventions, yet almost certainly excludes potentially relevant research from other sources in each topic field. Therefore some research and reviews have not been included which may have been relevant. The review style I chose allowed me to approach the reviews using a narrow focus concentrating on systematic reviews of reviews and reviews. It allowed me to develop a broad understanding of the issues surrounding each of the intervention topics, and concentrate on how well the CHIP projects reflected the 'current best evidence'. The search for this evidence was

'retrospective', given that the projects had already been commissioned before a review of evidence was conducted. As recognised by Parry and Stevens (2001), considerable effort is required to undertake the search for and synthesis of evidence relevant and applicable to public health interventions and CHIP was no exception; it had to contend with other priorities (e.g. time, politics, funding allocation) within the CHIP system in its beginnings, and is another manifestation of the challenge of 'real world' public health practice.

Due to the nature of reviews and the limitations of Randomised Controlled Trials, there is little evidence from the reviews to determine the role that implementation played in the outcomes, or the degree of variation between interventions under scrutiny. This may be a matter of reviews or individual studies not reporting on these elements of practice, in which case it is a limitation that I did not contact authors directly to collect this information. It is also likely that these elements of intervention practice have gone under-evaluated and therefore under-reported, in which case this is a limitation of the studies and the reviews.

A limitation of my review of evidence may be the transferability of the review findings for application in UK settings. Some reviews collate evidence collected in countries other than the UK and raise issues of external validity. All things being equal, health promotion initiatives will probably be interpreted differently from population to population. They do not necessarily translate in full and may therefore require interpretation at a local level. Context may have an effect via differences in national statistics, demographics and prevalence rates of common problems; history/background of issue (and response in local area), current agenda; social, cultural and regional approach differences; social, cultural and regional response differences.

In my design, collection and analysis of before and after evaluations, I designed evaluations that would be simple to conduct and that minimised 'extra' work for the staff delivering the interventions, aiming to maximise 'buy-in'. The quasi-experimental design was ideal for this purpose, but there are a number of limitations. I did not collect control data for any of the projects. I used power calculations to determine sample size but I did not allow for subgroup analysis in my sample size calculations. Indeed it was challenging for interventions to collect the amount of data that they did, and a larger sample size may have over extended the time-limited nature of data collection in the interventions. There were no pilots for these evaluations due to the time-dependent nature of the CHIP programme and the evaluations. Further, communication with project staff could sometimes be difficult and as a consequence descriptive data for most interventions was partial or incomplete.

There are some sources of bias likely to be common to all of the evaluations and I will discuss them here. It is likely that selection bias has affected these samples. Selection bias occurs when there is a systematic error in the exposed and unexposed groups being studied which resulted in a distortion of the association between exposure and outcome (Szklo & Nieto, 2014). Relevant to the present study is differential loss to follow up, which occurs when the participants lost to follow up over the course of the intervention are different from those who remain in the intervention (Szklo & Nieto, 2014). Those who initially attended an intervention but did not complete the evaluation form or dropped out of the intervention may have done so because of a disability or disease, a mental health difficulty or other factors which remain unknown but could have affected the differential loss.

Self-selection bias is another bias, and it is inherent in the design of two of the interventions examined in this chapter (OBOL and FAAF). It occurs when individuals participating do so because they are motivated to attend the intervention

for a particular reason. This bias forms the basis of recruitment for these studies, and reflects a sample of individuals motivated to attend. Because the recruitment of all participants was the same, this bias is less likely to affect the outcome. However, both OBOL and FAAF are multi-component interventions, OBOL addressed physical activity levels, healthy eating and self-esteem; FAAF addressed physical, social and mental wellbeing. Therefore the motivations for attending could have been different between participants selecting into the intervention for different reasons, and this could have impacted on the outcomes, or affected drop-out rates differently.

Participants in the interventions are likely to differ from the general population by attending of their own volition. This could result in higher or lower levels of wellbeing among participants e.g. the 'worried well' compared to levels of mental wellbeing in the population of Coventry. This issue is addressed further in Chapter 8.

It is also likely that a type of information bias, such as recall bias, may have affected the FAAF and OBOL interventions. For example, participants may over or under estimate the amount of fruit and vegetables they consume (Macdirimid & Blundell, 1998), or they may over or under estimate the amount of physical activity and could be influenced by social desirability (Adams et. al., 2005). With OBOL in particular, participants could make more accurate observations of their physical activity or healthy eating habits because of the intervention itself educating participants on portion sizes, for example.

Alcohol: SDC and ATR

It was unfortunate that insufficient data were collected from these two evaluation settings. This may have been due to too infrequent contact at the setting location, where after set up and agreement of the intervention protocol only regular email updates were given. However the protocols were the same for these projects as

with the others so this alone may not have been the cause. At follow up contact meetings it became clear that SDC data were collected incorrectly despite the provision of step by step instructions and of data collection forms co-designed and agreed with intervention managers. In the case of ATR, up to 25 cases were confirmed as collected from email correspondence, but files were reported as lost and consequently mental wellbeing outcomes from the intervention could not be evaluated.

Wellbeing Mentors (WBM)

There were some limitations specific to the WBM intervention. As part of the selection process undertaken by the project manager, it was important to involve schools that expressed motivation to participate, to increase the likelihood of project participation and optimal involvement of school personnel. This resulted in the purposive and non-random selection of schools. It is possible therefore that there was selection bias at the school level, where participating and non-participating schools might differ. Participating schools were in general representative of other Coventry schools based on a range of levels of deprivation represented in the participating schools. This was determined by using the proportion of children eligible for free school meals (a common proxy measure for school deprivation) in participating schools. The proportion ranged from 10.5% of children eligible (less deprived school) to 38.8% (more deprived) of children eligible among the schools that participated in the intervention (Coventry City Council, 2012), thereby representing a range of deprivation levels represented in Coventry schools overall.

I could not obtain some measures of process data from those delivering the intervention. Process measures included session attendance data to track ‘dose’ in pupils, the number of pupils who were ineligible to participate because of prior involvement in the intervention to provide a more robust denominator, and those meeting another exclusion criterion such as a referral for further support. I was also

unable to collect control data from the larger school populations within the same time period therefore I cannot determine whether the observed effects are due to an increase in mental wellbeing common to both intervention and non-intervention pupils.

Selection bias may have occurred during the referral process within schools (sometimes referred to as a 'diagnostic bias'), where some pupils may not have been identified as eligible to receive mentoring. Reasons may have included lack of identification of a problem- average behaviour, adequate grades, and not raising general concern of staff from emotional or behavioural challenges or low attainment, when pupils may have in truth been suffering from health related barriers (and therefore not meeting their full potential). Selection bias may also have occurred when the pupils that were included in the intervention initially did not complete WEMWBS due to having more severe health related barriers to learning and were referred elsewhere for support.

The evaluation was pragmatic and reflected the challenges in evaluating community based interventions, particularly where staff have high levels of autonomy, as in the school settings. I consider a pragmatic evaluation to be one where the evaluation was designed to maximise acceptability to those delivering and receiving the intervention while aiming to maintain sufficient and accurate data collection.

Reflecting on my methods, I may have been able to monitor the progress and wider data collection if I had been present at each school or met with each mentor one-to-one to discuss all the particulars of data collection and evaluation (this was only done in a group setting).

One Body One Life (OBOL)

There was considerable loss to follow up among the OBOL participants in this study, with around 70% of those who completed the baseline not completing the

follow up information. This introduces bias due to differential loss to follow up, discussed above. While the participant characteristics I collected did not show statistical differences between baseline, completion or follow up, there may have been other characteristics not observed where participants differed, such as employment, education, or baseline mental wellbeing or physical activity levels.

The collection of data from the OBOL project was different from WBM and FAAF. The project employed an external 'data manager' who was not familiar with the components of data collection and management. As a consequence, there were errors in the dataset which took time to be corrected and went unknown by the project team until I identified the errors during my analysis of the dataset. The errors suggested a lack of technical knowledge and possibly a lack of rigour and oversight of the information beyond that of WEMWBS (the reason for my involvement in OBOL analysis).

This illustrates the challenges of the interpretation of practice-based evaluations implemented in community settings when 'project teams' can be disparate, and communication may not be as frequent or in-depth as might be required, creating opportunities for 'unknown unknown' aspects of information.

Fit as a Fiddle (FAAF)

A weakness of this evaluation is the lack of descriptive information on the total eligible population compared to the sample data. I do not have access to the WEMWBS scores or other information on those participants lost to follow up, those attending other FAAF classes (which might have been less well attended) or missing data which may not have been reported or collected by project staff.

Questionnaires changed mid-evaluation, adding questions to the 12-week form that were not on the baseline form. I could not collect information on changes in fruit and vegetable consumption for example because the question was only on a minority of forms at the baseline.

Future monitoring of progress for FAAF might incorporate extended follow up of participants, both as they continue the intervention and post intervention follow up to assess the longer term sustainability of improved mental wellbeing levels. This could include the use of a control group, a larger sample size to examine any potential differences between groups by age or gender, (as the sample may have been under powered to identify between group differences), and the use of validated questions in the FAAF evaluation questionnaire.

CHAPTER SUMMARY

Overall, these three observational designs illustrate the challenges of community based intervention evaluation. The evaluations were designed using a pragmatic approach and a process of feedback on the acceptability of the evaluation documents and process with those managing the delivery of the interventions.

The limitations identified in this chapter include small selected samples of participants, losses to follow up and the potential for unobserved differentials between baseline and follow up groups, no controls, and they are all short term interventions that limit the ability to identify long term sustainability of behaviours.

The strengths of these evaluations are that they are ‘real-world’ – developed and delivered by staff and volunteers embedded in the community in which the interventions take place. This increases the likelihood of sustaining the project outcomes, and it also increases the likelihood of establishing the ‘lessons learned’ for future local interventions or events (whereas the knowledge gained may be

'taken away' if the implementation team is not locally embedded). They are prospective, and they are more likely to have high external validity, than if they were conducted under controlled circumstances using specifically recruited populations. These challenges illustrate some of the practicalities of community based public health evaluation in practice, and can be used to refine future projects.

In the next chapter, I present the findings of my qualitative analysis conducted with stakeholders of CHIP.

CHAPTER 7: QUALITATIVE INTERVIEWS

7.0 QUALITATIVE INTERVIEWS

In this chapter, I describe the results of my fourth research question: '*What are the attitudes and views of CHIP stakeholders regarding CHIP implementation, evaluation, public health improvement practice and mental wellbeing outcomes?'*

First I introduce the sample. Then I describe my methods of analysis which include the process I used to code the interviews, and the technique I used to identify and interpret emerging themes. Next I examine and discuss findings by theme. Finally I summarise thematic findings, discuss strengths and weaknesses and draw conclusions.

7.1 METHODS

7.1.1 Ethics

Ethical approval was granted by the University Biomedical Research Ethics Committee on the 6th February 2012 [reference no.128/07/2011AM01] (Appendix 14). All participants gave informed consent to take part in the interviews.

7.1.2 Design

An in-depth qualitative design was used. I used face to face, one-on-one semi-structured interviews to collect data.

7.1.3 Participants and setting

The sample was purposive. The sampling frame was identified from a group of 'CHIP stakeholders' (public health directorate members, project managers and intervention managers) who had been involved with the use of WEMWBS, directly or indirectly. A 'CHIP stakeholder' was defined as a person involved in the organisation, management or implementation of CHIP interventions. These potential participants included people affiliated with both the NHS and the city council and

local authority (LA). I invited approximately equal numbers of people from each group and from both organisations to be interviewed: CHIP directorate (6 invited), project managers (6 invited) and intervention managers (5 invited). I did not interview CHIP intervention participants.

7.1.4 Interviews

If initial email interest was given, I sent a follow up email outlining how the interviews were structured and what topics might be discussed, and arranged a time and place to meet which was suitable to the interviewee. A study information sheet was given at this time (Appendix 11).

The interviews took place between March 2012 to May 2012. Each interview was digitally recorded. A hard copy of the consent form was signed before the interview commenced and was sent to the interviewee after the interview took place. During each interview I followed a guide which addressed three topic areas: implementation and evaluation, public health improvement practice, and mental wellbeing outcomes (Appendix 12). The guide was divided into two parts. The first included structured questions adapted from each domain of the RE-AIM framework: Reach, Effectiveness, Adoption, Implementation, Maintenance. The second included unstructured questions about the interviewee's overall experiences. The guide was revised after the first three interviews to ensure it flowed and to ensure maximum suitability for interviewees. Each interviewee was given a ID label to maintain confidentiality. Labels were divided into three types of groups, 'B' (Board of Directors), 'P' (Project and Programme Managers), and 'A' (Activity Officers).

7.1.5 Validation

Issues common to the reliability and validity of qualitative data were addressed (Creswell 2009). To identify transcription mistakes, I read through transcripts whilst listening to recordings and noted mistakes on hard copy. I cross checked other

potential transcription mistakes as I coded and analysed the data. To ensure coding did not drift in meaning or definition, I initially coded one interview from each management group, revised redundant codes and refined unclear codes and then proceeded to code the remaining interviews. To ensure inter-rater reliability, a senior qualitative researcher independently coded one interview to compare with my original codes. To clarify my own bias in the study, I created two codes to manage reflexivity during coding. To ensure interviewees felt their views were accurately represented, I reported a summary of themes to 14/15 interviewees and sent a full transcription to interviewees who requested one. To identify discriminant validity, I noted disconfirmatory cases to ensure the range of views present in the analysis was represented.

7.1.6 Data coding process

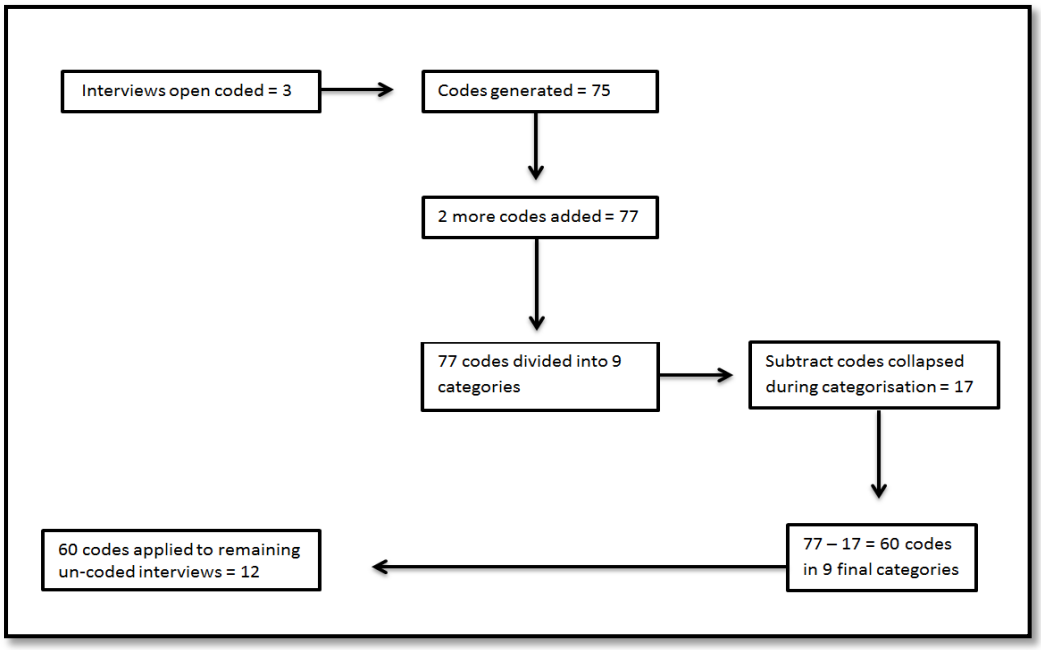
Interviews were transcribed verbatim by a transcriber. Once transcription was complete, I conducted an initial hard copy read-through of each interview to familiarise myself with the data from each participant. I read the transcripts in a random order.

I uploaded the transcripts on to the data organisation software NVivo 10 (QSR, 2012). I selected one interview from each group (n=3) and 'open coded' them line-by-line. These codes represented varying levels of abstraction, from the abstract 'delivering the programme' to using exact words or phrases used in the transcript itself, such as 'buy-in'.

From these three open-coded interviews, I generated 75 codes. I assessed the similarities and differences between codes and expanded or combined them where appropriate. Two more codes were created at this stage (77 codes). I then developed a framework which organised the 77 codes into larger categories. The coding framework resulted in 9 categories, which enabled me to collapse 17 codes

and reduce the overall number of codes to 60. These were applied to the remaining 12 interviews, using the category framework as a guide (Table 32). During this process I noted points of interest and queried parts of text, I referred to these notes as 'reflexive coding notes'.

Figure 17: Code creation flow chart



Emerging codes from later interviews were added to the code list, and interviews already coded were examined for the 'new code' using the word search feature in NVivo. Once the interviews were coded, I clustered codes into categories. A category summary report was produced, hereby referred to as a 'category report'. Table 32 presents the categories and corresponding codes.

Table 32: Qualitative categories and codes	
Category Summary	**Codes included**
CHIP	CHIP beginnings, CHIP legacy job role, joined up programme approach, silos, historical context, geography, environment, the transition
Delivery/Implementation	Adoption & adaptation, dashboard, delivering the programme or project, formative changes, indicators, interventions, maintenance and sustainability,

	participants, reach, variation, service user engagement, life-course
Evaluation & Evidence	defining outcomes, evaluation, evidence, evidence based public health, reporting and monitoring, measuring outcomes, effectiveness
Knowledge	Beliefs and opinions, historical context, knowledge, learning and understanding, rationale, skills, communication
Mental wellbeing	Defining MWB, describing MWB, understanding mental wellbeing, measuring mental wellbeing
Planning, Organisation	Aims and objectives , Programme planning, structure and design, commissioning, decision making, funding and resources, health improvement, project management
Reflection & Projection	Feelings, highlights & strength, lowlights and weaknesses; metaphor, motivation, personal impact, personal style, Then and now reflection, changes, future
Reflexivity	Interviewer interaction, mutual memory
Working with Others	Working together, relationships; organisational differences; Problems and difficulties, challenges, room for improvement, missed opportunities

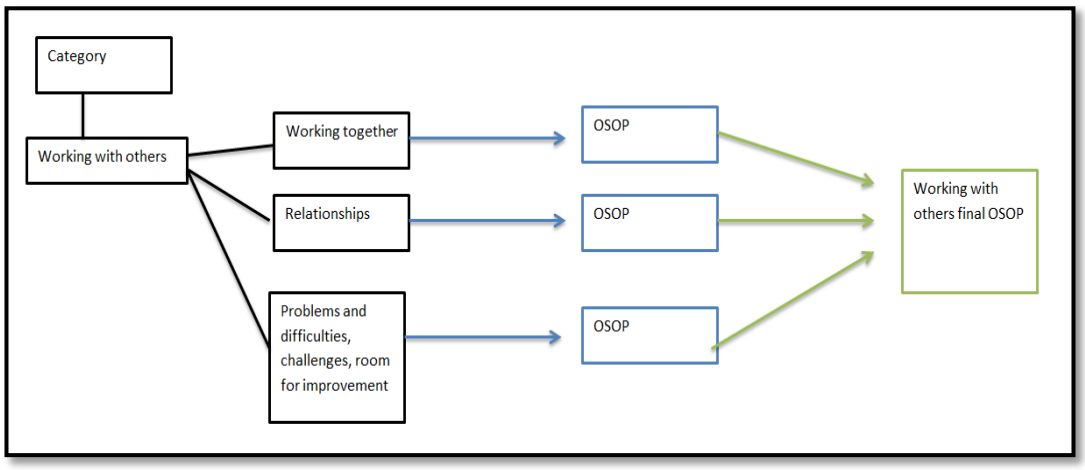
7.1.7 Data analysis

I analysed the data using the 'OSOP' technique for thematic analysis ('One Sheet of Paper'), developed by Ziebland and McPherson (2006). For each category, I first recorded issues from the coding summary (and the ID of the interviewee who raised the issue) on a whiteboard. When all the observed issues from the category were recorded on the whiteboard, I looked at the similarities and differences of interviewee views, how often the views were shared by others, how they were contextualised, where the contexts and meanings converged and diverged between issues and how the RE-AIM framework elements might be considered. I moved back and forth between these considerations and my reflexive coding notes. Second, I refined the whiteboard content by transferring it to paper. Large categories (80+ pages) were separated into subgroups. An OSOP was conducted for each category subgroup using the method described above and those OSOPs were synthesised to make up the final category OSOP. Figure 18 illustrates this process. An example of an OSOP 'in action' is in Appendix 13.

At this stage I began to develop themes. I developed each theme through an iterative process of refining emerging ideas and expanding on emerging concepts, ideas, and issues presented in OSOP. As I began to cluster OSOP content, I examined these clustered 'issues' and noted the similarities and differences, discriminant cases, gaps in views and points of view between and within OSOP categories, groups of interviewees and each individual interviewee. I considered the presence and absence of content. I reflexively asked, 'what is going on here?' and 'how might these perceptions converge and diverge relative to the experiences of other interviewees?' I moved freely between raw code summaries, OSOP categories reports, photos of OSOPs and hand-drawn conceptual and relational 'mind maps' of OSOP content.

Throughout the process of identifying emerging themes, I identified quotations from the original interviews to illustrate and 'cross-check' the consistency of the theme or sub-theme with the raw interview content. I then undertook a final cross-checking of my interpretation of OSOP issues with the original interview references/quotations to ensure I had not deviated from the theme, or the theme had not 'drifted' from the raw content (Creswell, 2009). I repeated this process and reflexively recorded emerging themes until my final themes crystallised.

Figure 18: Example of a category and OSOP production



7.2 FINDINGS

Of 17 requests for interview, 15 stakeholders agreed and were interviewed. One stakeholder declined via email and one did not respond. There was a balanced number of participants from the city council (n=8) and the NHS (n=7), and from each stakeholder group: Directorate (n=5) programme and project management (n=5) and intervention/delivery management (n=5). Interview lengths ranged from 45 minutes to 2 hours 10 minutes and were on average one hour long. Ten (67%) interviews were conducted in the office of the interviewee and 5 (33%) interviews were conducted at the University of Warwick at the interviewee's request.

7.2.1 Thematic findings

The first theme, 'defining, designing and adapting' represents the issues stakeholders described regarding the planning, design and structure of CHIP. Second, 'practising partnership' illustrates stakeholder's partnership working and organisational communication. The third theme 'knowledge, learning and understanding' represents issues pertaining to knowledge, evidence use and learning lessons.

7.2.2 THEME 1 'DEFINING, DESIGNING & ADAPTING'

This theme reflects the stakeholder accounts of CHIP which relate to the structure and mechanisms of CHIP development, the consequences that came from the early design of CHIP, and how that was managed within practice. Subthemes address the implementation and evaluation aspects of CHIP, as well as issues related to practice and mental wellbeing outcomes.

CHIP stakeholders had differing, equally strategic views on the aims of CHIP. Aims of CHIP were described as ‘to put health improvement on the public health agenda’, ‘to create opportunities for health improvement innovation’, and to ‘bridge the gap between local authority/city council and the NHS’.

Stakeholders described feeling that CHIP was ‘exciting’ (A15, B3, B6) and that it was a ‘fantastic opportunity’ (B3, B5, B1). These feelings of excitement and optimism were coupled with the notion that CHIP was also ‘a nightmare’ and ‘frustrating’ (P4,P5, A15, A11) and people felt ‘rushed’ (A11,A15,B3,PL6) at the beginning.

7.2.2.3 Defining concepts and determining meaning

Accounts from stakeholders illustrate the significance of definitions of several key concepts during CHIP. The presence and absence of shared meaning around concepts was a source of confusion and sometimes conflict among stakeholders and organisations throughout CHIP. Concepts that proved the most challenging were ‘commissioning’ ‘mental wellbeing’ ‘health outcomes’ and ‘evaluation’. These concepts appeared to be challenging for two main reasons. One reason was that there were culturally normative terms or concepts which differed between organisations. The second reason was that these concepts were relatively new for some stakeholders. They had been introduced with implicit assumptions of the levels of staff knowledge.

Culturally Different Concepts

Interviewees from different organisations clearly understood different meanings for many concepts or ideas, but an important one for directorate stakeholders was

determining whether something was ‘commissioning’ (services for people) or ‘procurement’ (purchasing goods (which can be one aspect of commissioning)). Most directorate stakeholders discussed how this was the cause of some delay:

> *“Although it was a kind of NHS initiative at the start it was run from within the city council, who I think had very different processes, all their procurement rules and things like that were different. And again I think... that wasn’t really thought in enough detail at the beginning... I think it created problems and delays throughout the process.”* (B5)

> *“So there is a fundamental difference and that’s one of the things that came out of, I think, that came out of CHIP. Which is there’s a way the NHS approaches commissioning... And there’s a way that the local authority approaches commissioning. But they call it procurement. It’s not commissioning. (Laughs)*

> *Interviewer – So there’s two different…*

> *Interviewee – Two different cultures around it.” (B3)*

Evaluation was another concept which lacked a mutually agreed definition. Evaluation was sometimes classified as ‘monitoring’ and portrayed in some cases as requisite but undesirable. This occurred between organisations and different levels of management. As one stakeholder described, evaluation held culturally different meanings sustained through assumptions about what evaluation ‘should’ mean and what evaluation ‘did’ mean:

> *“And perhaps that irascibility is kind of unfair because I’m assuming that people are at a slightly different level to what I think they should be at. And again it’s that cultural mismatch in terms of knowing what an evaluation*

should be about … and almost, err, finding it difficult to entertain the notion that people don't understand evaluation." (B1)

7.2.2.4 Designing

Interviewees touched on the planning and design of CHIP and the impact that 'fast-tracked' planning had on implementation due to the short time period to plan the commissioning of services. These conversations were characterised by a waxing and waning motivation for a clear, rigid structure to follow, in contrast to a need for flexibility and autonomy for projects to suit the needs of their target populations. Some reported feeling stifled by a too-rigid structure, while others thought there was too much flexibility.

One stakeholder described the impetus, design and rationale of CHIP as a programme with good intentions but lack of foresight in managing organisational change:

"... that they basically got their eighteen million or so, which they were told to use and because the horizon in the NHS and city council's twelve months at the max, they, just very rapidly, tried to develop projects in silos to do discrete pieces of work. And [X]'s opinion, [X]'s design or what his view was, he always wanted to get projects up and running and then once they were delivering then try and get them to optimise by introducing these cross cutting themes or introducing healthy settings. And to me, having done change management working partly you build something up, it's got a huge amount of momentum behind it, there's no way you're going to be able to shift that to a completely new model of working half way through a programme." (P5)

CHIP was seen as requiring planning that was more developed, well-resourced and clear at its inception than actually occurred. Stakeholders conveyed a sense of

confusion and miscommunication around how the planning was conducted, and illustrated how some challenges may have been avoided had managers been 'very, very clear' (B3) about what they wanted to achieve in the programme. The confusion surrounding planning and resources caused frustration and took time to resolve:

> *"Actually it's if it'd been properly resourced, in terms of commissioning and procurement support, then I think it would've been easier for people to, you know, I think people went round and round s- a number of times … doing things again and again 'cause they weren't done properly first time. And it was a frustration." (B4)*

In equal measure, stakeholders also illustrated how this lack of planning could also be perceived as allowing a level of autonomy and flexibility which could facilitate project and programme development:

> *"if they'd done it perfectly it would not have got off the ground"* (B1)

> *"It was difficult, again, to outline it in any clearer way because we needed to have that flexibility for them to work."* (A12)

Evaluation

Evaluating projects using outcome measures was new for some stakeholders. This presented practical design challenges for intervention managers. These challenges related to developing and using tools to collect data and report progress, gaining 'buy-in' from implementation staff, using mental wellbeing as an outcome measure and reflecting on prior assumptions about evaluation.

Questionnaire development and collection posed challenges. These challenges included the use of multiple questionnaire drafts to collect repeated measure outcomes making some comparisons impossible, losses to follow up, and lack of

support in data analysis. At times, the hierarchical or traditional evaluation structures failed to allow collaborative feedback when intervention managers had insights so that these were overlooked by higher level managers or external evaluators:

> *"And our take has always been well you can't do that because you get no correlation if you get... randomly survey twenty per cent then you have to randomly survey the exact same twenty per cent next time otherwise your figures don't match 'cause, you know, you'll get one person who'll say oh it was no use to me and the next time you do it yes it was brilliant. And trying to get that across to the person who was on board at that point in time didn't seem to go down very well at all. Didn't seem to grasp that..." (A10)*

> *"...But, err, we did, err, [external organisation] evaluated our programme and the aim of that was to get some tools that these kinds of programmes could use, but the stuff was really academic...The people we work with, literacy levels are really low, they're not gonna understand some of the stuff, so it was completely useless." (A11)*

Another practical evaluation issue was gaining access or 'buy-in' for the CHIP programme and projects. Stakeholders shared a variety of views on the causes of, or solutions to trouble during evaluation. For some, there were difficulties stemming from cultural beliefs that collected information would not be used or fed back to staff, undermining trust and a disregard of the time and effort put into collect data:

> *"The culture within this, I don't know if it's this country or generally or what have you, about measuring and recording and. I know for a lot of people it's about we've been asked to provide this data, it goes into a big black hole, will never come out and nobody knows. I totally understand that and I*

wouldn't want to be doing that either... But this can show some really good outcomes." (P9)

For others, the timing of an evaluation request amidst extended, competing requirements did not fare well in a setting where people already felt pushed to their capacity:

"Erm, it was introduced to us at quite a difficult time. Just, sort of, workload. And it was like another thing that we were being asked to do and it was it wasn't very well received by staff...Not in that, we we totally thought it was a good idea, it was just another thing. We had, like, five different questionnaires to to do for different things." (A13)

Yet for some the challenges of buy-in were overcome by repeatedly and clearly communicating the evaluation rationale to staff delivering interventions:

"Yeah. So we've always made that. That's one of the key things that always happens in one of those meetings. And getting the buy in and it's open and frank discussion and you do get, you know, there are certain instructors say yeah, it's overkill, it. Yeah. But it's not overkill. Let, you know, let's just go through it again. This is why it's important." (A10)

The example demonstrated by interviewee A10 shows a sense of 'two-way street' communication ("...frank discussion" was had rather than a request was made), where the aims, objectives and supporting evaluation rationale are made explicit. This is in contrast to the other examples where evaluations were requested without a clear explanation of the rationale, or a follow up to justify the time and effort taken to complete the work.

Moving beyond outputs

When stakeholders reflected on evaluation it was seen in both a positive and negative light. Positively, CHIP allowed stakeholders at each level of management, in both organisations, to move beyond the traditional evaluation style of 'processes and outputs' and think about the broader population outcomes shared by those working in both health and social care contexts:

> *"Whereas actually to start them getting them thinking about this is always gonna be a selling job about what is the longer term benefit of what you're doing, and people can see... it's a good thing, but actually to see the bigger picture. And I think getting people at that level to think about that bigger picture and make that case is also been, we've just kind of moved people on a bit on that. (B5)*

And at the same time understanding through hindsight the unanticipated practicalities of evaluation:

> *"...So we didn't have a framework for capturing [the evaluation]. And that came down to our lack of knowledge. ..And from someone who thought I knew about evaluation, this project has taught me that I've got a lot more to know about it."* (B1)

Evaluating mental wellbeing

The majority of stakeholders described how they had learned more about mental wellbeing because of measuring it during CHIP. However there were more mixed views about where mental wellbeing ought to fit as a health outcome measure. Some extolled the virtues of mental wellbeing as an outcome measure:

"And actually recognising mental wellbeing as a really important outcome measure for most of what the public services in Coventry are starting to [implement]." (B5)

"Yeah, five ways, built in as well so people understand the importance of that. And it's not pink and fluffy...There is an evidence base to it." (B3)

"...doing that those kinds of things [mental wellbeing], we did them at session one, seven and fourteen, but because that was on our mind, well I know for me certainly, it, kind of, prompted me to to delve more into that. (A13)

Others remained sceptical about its utility as an outcome relevant to all projects:

"Admittedly there may be a perception that ours [clients] aren't really suitable for that because that is too soft. And actually mental wellbeing is...for people less problematic." (P8)

"And equally eating breakfast and increase of fruit and veg is of interest, as of much interest to me as the increase in mental wellbeing, because you want to see all of these sorts of changes." (A15)

7.2.2.5 Adapting to the design

Operating within the design of CHIP proved difficult when stakeholders felt there was too much flexibility or too much rigidity. Among those managing and implementing projects the rush to establish projects in the pre-planning stage appeared, at times, as either overly flexible or as lacking in guidance as to what was needed:

> "*I kind of got the impression it was like, okay, there's x amount for alcohol, there's x amount for sexual health, there's x amount for parenting and you go off and do what you want."* (P8)

> "*And it was just horrendous. And each PID [Project Initiation Document], you didn't actually know what a PID was and how long a PID was meant to be. Erm, we had we were told we had to start spending the money very quickly. I think the money came in in April 2009, I came into post in June 09, my job share partner had just come into post in April 09 and by the summer we were expected to have written our PIDs, allocated the money, written the service level agreements, erm, while also being told all these project management things that we had to do." (A15)*

In contrast to this over-flexibility, the beginning of CHIP introduced a monitoring tool called 'Dashboard', a visual dashboard of indicators to organise and support project management. The Dashboard was a comprehensive monitoring tool, described as being 'superimposed' 'overbearing' 'onerous' 'horrendous' and 'creating a barrier' but, for at least two stakeholders, it did have merit being 'of development benefit' and 'prompted a lot more thought'. Most stakeholders reported feeling it simply took up too much time.

> *"Cause the reporting, particularly in the early days, when it was monthly reporting on all kinds of stuff. And actually it just it became an industry in its own little right that I think really detracted from some of the provision."* (P8)

'Dashboard' is a good example of how CHIP struggled as a consequence of its early design, and adapted and resolved challenges. Initially the chilly reception by staff of Dashboard made it more difficult to build trust between programme and project stakeholders:

> *"I met with projects they were constantly going through it and it it immediately it created this barrier, a hu- huge barrier between the programme team and the projects, who, you know, you really... you need that synergy. You need that that ability to work together, to trust each other."* (P4)

But this improved after the change in management who recognised the strain Dashboard was putting on some projects and worked with projects to reduce the reporting to a manageable level:

> *"So, there was, and I know there was a change, this was very early on and that person moved on and did something else and the reporting developed into such a way that it is now that is far better."* (A10)

Sustainability as a strategy

In the context of 'adapting', sustainability was discussed in terms of sustaining an idea and sustaining an intervention. There was a noticeable difference in the descriptions by the directorate group and by the project and intervention managers groups. Stakeholders in the directorate tended to discuss the strategic meaning of CHIP- sustaining the idea of CHIP to 'put health improvement on the map'. This was in contrast to intervention leads focused on sustaining the intervention. In one sense this is obvious given the roles and responsibilities of these different groups. However, it does suggest different value structures for motivations in the implementation and evaluation of CHIP from the directorate:

> *"When we get on to the legacy of CHIP. Is actually, we're spending this money on health improvement. So all the policy makers now have health improvement, CHIP, budget requirement in their minds. The fact that there isn't any money doesn't mean that that it's not made a significant difference to the way they think."* (B1)

> *"And I think what CHIP was good at and I think one of the real positives of CHIP was I think we've got a lot of thinking about how you measure outcomes, how you project manage things, having good project management approaches, which I think has been really, really useful in getting people to think about how do we measure the impact of wellbeing and how do we get capture the process indicators and link them to outcomes measures. And I think people got better at that over the course of it*." (B5)

While the views of project and intervention managers differed in their focus on sustaining a particular intervention, rather than an idea or an ethos:

> *"... it's always been central to our outlook is... sustainability. You know, what happens to this after the funding runs out? We've never looked at it from a perspective of, you know, how do we spend this funding now? It's how do we make it last as long as we can and then how do we drive it forward from there on." (A10)*

> *"We're in a really fortunate position 'cause I've tried to make sure we keep in line with public health....Erm, so we've gotta strong link and already we've got funding until 2014. Erm, in the hope that once public health transitions into the local authority… and everything has been ironed out, that we could, erm, then either be commissioned further or u- have some of the mainstream funding to keep the projects going.." (A11)*

The differing views of sustainability and the values tied to what people describe wanting to sustain points to a lack of shared values, or commonality around long term goals in health improvement delivery.

7.2.3 THEME 2 'PRACTISING PARTNERSHIP'

This theme illustrates stakeholders' reflections on cross organisational working, working within and between teams and developing relationships over time. While CHIP may have technically started out as a 'partnership', participants reported that it was through working with people via CHIP that partnerships developed and solidified. In this context partnership needed to be 'practised' in order to meet the expectation of what a partnership 'should be'. Characteristics of practising partnership in CHIP related to ways of working that created access and barriers to progress or successful working partnerships. Practising partnership on occasion created confusion, conflict and sometimes both. When stakeholders reflected on partnership practice, they described the strengths and weaknesses of each organisation as well as the challenge (and perhaps mystery) of actually practising partnership.

7.2.3.1 Creating access and barriers

Access

Working with others created access to practising partnership through constructing relationships, and developing practical ways to work strategically and sustainably. This access supported intervention implementation and helped to develop knowledge and skills among stakeholders.

Constructing relationships

Relationships were seen as important. Relationships which created access were built over time, and built trust through open discourse and the sharing of an ethos about work. One stakeholder discussed in detail how a collective team ethos was important for developing and sustaining implementation.

> *"I love the team, erm, that's been built. 'Cause I think we work really well together. And they've got such good knowledge of the people who work in the area. And I think that makes a massive difference. So we're kind of like, we had this storming and norming phase where we were getting people trained up and now, kinda like, we're running with it. And that's such a good feeling."* (A11)

Strategy and sustainability through partnership

Some partnerships have enabled projects to develop and expand such that their sustainability has been extended because of CHIP. This sustainability was strategic for some, while for others it seemed a more natural but perhaps equally valuable occurrence:

> *"It'd be quite easy just to sit back and say well if the money runs out in 2013 it runs out. Fair enough...But none of the team are like that at all. You know, we fervently believe that it should keep going and we will fight, you know, hammer and tooth to make sure it does." (A10)*

> *"So to a degree it was a bit of a god send. It allowed us to do something that we hadn't done before, proved that they work and then, I mean, we have effectively mainstreamed all three of those mainstreams now." (P8)*

Barriers

Working with others created barriers when politics, power and status were at issue, when the effort didn't seem 'worth it' (P4), when communication faltered, when project management and planning were unclear, or poorly executed, or faced culturally different organisational practices. In the context of CHIP, barriers didn't necessarily prevent work from happening, but through the reduction of resources, time and effort, they reduced the capacity of stakeholders and slowed down the rate of progress.

Politics, power, status

Political aspects of working in partnership were not discussed in a positive light by any stakeholders, and were usually described as explicit barriers to partnership, a sign of lost potential, or a lack of professionalism. Political barriers were discussed at all three levels of organisations:

> *"And no, but but they don't even want to work with each other, it feels like. There's so much politics in that work stream.... (Laughs) ... 'Cause everyone seems to want to be the chief. In that area....And no one's really playing ball, it feels like." (A11)*

> *"And I don't know whether we did enough to countermand that...whispering campaign against the programme" (B3)*

> *"...And it's that side of things, the power and control I think is just so important to them rather than team working and partnership working." (P5)*

Hierarchies and 'a bit of brinkmanship' (P4) were seen at the project level as well as cross-organisationally. Political issues were identified by one project lead between two intervention providers:

> *"...the link between those two things, maybe people holding onto clients and a misinterpretation actually. To a degree there's an element of people wanting to misinterpret because they wanted an excuse to hold on to the clients...And I think that is a barrier." (P8)*

Motivation

Most stakeholders discussed the amount of effort it took to make work happen during CHIP. While some of this would be expected from any project or intervention, underpinning this issue was the notion that more effort than usual was required.

This included communication between programme management and project leaders,

> *"Just setting up indicators and getting people to buy in to them and sign up to them and understand it and having to recommunicate and communicate again and, you know, go over old ground, over and over again, has just been frustrating.... Erm, but at times you just think I can't be bothered any more. To be honest with you. You really do." (P4)*

and led to distractions related to the Public Health transition, which was occurring in relation to the NHS and Social Care Act 2012 (Department of Health, 2012).

> *"What was hard is the public health changes. That has sucked motivation in a major major way..."*
>
> *Interviewer: Motivation to do what?*
>
> *"...be creative, have energy, actually just deliver things."* (P5)

and to disagreements related to programme wide, cross-organisation decision making:

> *"I think ultimately [not having a unified view] de-energises the partnership and limits the achievements, really" (B4)*

Some motivational barriers weren't always clear when discussed in the context of partnership. It appeared that a desire for partnership working was hampered by something undefined, reflecting an uncertainty in how best to actualise a partnership, alongside possible explanations why those partnerships didn't take root:

> *"it'd be very nice to say right, when I go out of here today I'm going to go and do that. But I know I won't. I know I'd like to do it.*

Interviewer: Why why do you think...

Interviewee: Just time....Other things just take over...So rather than proactively seeking work you just reactively just do what work comes in." (A15)

Planning and design

Working in silos was an issue that stakeholders raised alongside questioning whether CHIP was a series of discrete projects, or an actual programme. Working in silos was seen as a negative aspect of working, but perhaps understandable. Participants seemed unclear what exactly partnership working was or how stakeholders were supposed to do it. This may have reflected the expectation that partnership should have existed in CHIP from the beginning, rather than being something that developed over time.

"The projects are operating in silos, for the most part. And we have tried to cross link them but it hasn't been as effective as we'd like. And I can understand why. It's not easy." (B1)

"And I don't think it was ever really developed. I think it was only at a kind of fairly late stage where people started trying to push some cross working." (P8)

"Yeah. I don't know. I don't know. Yeah, I mean, there are certain projects, like Work Place, where I still don't fully understand. I just, sort of, don't know what they're doing. And I actually I ought to know what they're doing." (A15)

Temporary staff and lack of long term working contracts were seen to negatively affect relationships. Short term work especially created challenges for developing rapport and building momentum in meeting project objectives.

> " *They knew that they were probably going to be made redundant in, you know, they didn't know whether it was three months, four months, five months, but they knew they were going to go....So you have no long term hope that it's all going to work."* (A15)

Inter-project comparisons

Another barrier, though not as frequently discussed as others, related to performance management and monitoring project outputs and outcomes. This barrier was demonstrated through the variability of measures used to demonstrate outcomes- some being shorter-term and more easily measured than other outcomes. This sometimes caused tension between projects and sometimes negatively affected programme-wide morale.

> *"...the variations in the outcomes we're trying to achieve also caused problems because some outcomes you can measure much more easily than others. And again, that just has an impact on how people feel, that if they can't demonstrate what they're doing particularly easy and someone else can then it it's a bit harder. There's huge variation in the staff skills or staff capability and staff dedication." (P5)*

In exposing two developmentally very different types of projects to each other as part of an overarching programme, CHIP created conflict through partnering two types of projects -- ones already running and with considerable experience- sexual health, and new 'innovative' (B3, P5) projects with little or no prescribed ways of working. This illustrates a 'zero-sum' effect when heterogeneous projects are brought together without a shared understanding (or explicit recognition) of differing project expectations and capacities.

Communication

Issues related to communication permeated all of the themes in this study, but there are some aspects of communication which illustrated specific partnership barriers.

First, the communication structures for feeding back evaluative issues suggest a lack of co-production which slowed down the progress of the project:

> *"It doesn't ever seem like a two-way communication thing...So they'll tell you what to do. But there doesn't seem to be any leeway to say well actually* ***we're*** *on the ground and I don't think that's gonna work." (A11)*

Second, multiple services operating in the same setting without communicating with one another harmed relationships existing within that setting:

> *They've actually gone straight to [the setting] to try and implement something, rather than working through the systems that we've already got and the relationships we've got with [the settings]. And that has someto-sometimes caused such confusion in [settings] that it's broken down some relationships. (P6)*

7.2.3.4 Characterising organisations

At times, stakeholders from each organisation characterised one another in both flattering and unflattering ways. Stakeholders described differences of culture, working approaches, inter-organisational working, and knowledge and skill sets.

Cultural differences

Characterisations of partnership practice reflected the difficulty the both organisations faced, with some of those lessons being positive, and some less so.

> *"I don't know. I think I think it's just, it's the definition of an outcome really. And I don't think anybody, necessarily, as I say, some some of the public*

health outcomes are flaky. And they're they're so called professionals writing them." (P4)

"I feel... in some areas they wanted to say right, you've given us the money, now go away. We'll do it." (B4)

'Cause ... I don't think they're used to being commissioned to deliver it. (B3)

Approaches

One organisation was considered authoritative, centralised, and rigid but reflective and somewhat progressive. The other organisation was portrayed as flexible and community-centred, but also traditional and non-reflective.

" ...(Laughs) But [org1] focus on a very centralised model....Of, boom, this is [org1] and we'll share. And we'll push it out. Whereas, [org2] works on very much a community based model. So rather than it being, sort of, centralised. You have central functions, obviously. But our approach is to take those services and deliver them and tailor them into the communities. So what we've got from CHIP is the best of both worlds." (P4)

"the [org1] tends to be quite powerfully dominant in getting people to do things...Whereas the [org2] because it's got its own sort of ability to manage itself within certain…boundaries, it is far more self-determining than the [org1] is." (B1)

On relationships between partners

"We've learnt a lot and I think not all that we've learnt about each other has been particularly positive either, some of the relationships have been difficult." (B4)

"There was a bit of an antagonistic relationship between them. Which I think is not massively uncommon from talking to other areas, and trying to manage referrals between agencies is always one of the really difficult bits." (P8)

Knowledge and skills

Participants also reflected on differences in the knowledge and skill sets between organisations

"And I know, and that's probably a sweeping statement, and it's not always true but, you know, that is fundamental that is the way that the [org1] will will perceive somebody. They'll categorise them and they'll they'll be in that category. Whereas, erm, [org2], having the knowledge of their own neighbourhoods and communities can can adapt. And I think that's, again, that's also been a benefit of CHIP. We've been able to pool those two." (P4)

"One thing I've noticed within the city in the PCT and city council staff generally don't get feedback and … they don't get the feedback at the personal level and they don't try and do proper feedback at project or organisational level." (P5)

A small number of interviewees expressed differences between two public health organisations- public health in the NHS and in Academia that these organisations too, must be brought closer in partnership.

"...it's back to that core thing...link between academic public health and operational, service public health is something that we that I keep putting on the agenda as we move into the city council." (B1)

Partnership came to have meaning for stakeholders through practice, and this developed over time. Practising partnership created opportunities for access to

resources and relationships and built upon the strategic goals for the project or programme. Good partnership practice facilitated the development of new approaches and optimal working strategies. Poor partnership practice- lack of communication, unclear goals, protectionist attitudes and 'unaired' assumptions- stifled this development. Barriers to developing partnership made practice difficult emotionally, socially and professionally. Barriers used up time and resources at all organisational levels.

7.2.4 THEME 3 'KNOWLEDGE, LEARNING,UNDERSTANDING'

This theme illustrates issues that emerged surrounding the process of learning and developing knowledge and skills throughout CHIP. Participants became aware of new concepts- mainly health outcomes and mental wellbeing. Experiences gained in practice were often presented as evidence, and even though academic or professional evidence was considered to be lacking from decision-making processes, it was not often discussed in the interviews. Stakeholders reflected on the lessons they learned while implementing CHIP, and characterised concepts which illustrated the problems of capitalising on lessons learned during CHIP.

7.2.4.1 Becoming aware of new concepts

Concepts that were new to either one or both organisations incubated and took on meanings as CHIP developed and varied by project, such as 'health outcomes' and' mental wellbeing'.

Health outcome

Several stakeholders addressed the difficulty that some of the project teams had with understanding a 'health outcome'. They characterised this as something fundamentally different to the more traditional 'processes and outputs' being

delivered. A lack of understanding of outcomes and the ways in which they differed from outputs made progress slow among projects where stakeholders struggled with the concept. This interviewee explained how they realised some teams didn't have a good grasp of these differences:

> *"So when I came on board one of the first things I noticed was we had a whole load of indicators, but they're in process indicators, and they weren't particularly helpful in terms of trying to deliver or drive people to deliver outcomes."* (P5)

For CHIP stakeholders, coming to terms with the differences between outputs and outcomes was exacerbated by a change in rhetoric that didn't necessarily reflect a change in the knowledge or understanding of staff:

> *"If you look at, sort of, process measures, and outcome measures and impact measures, there… were lots of people buzzing around using all those buzz words, but the people that were being expected to measure them weren't necessarily owning the reasons for them..."* (B1)

Perhaps because of the time-limited nature of planning CHIP, there was little opportunity for project staff to learn about the differences between outputs and outcomes. Practical experience was bolstered by the 'drumbeat' and 'drip drip' approach of the programme management team to keep project teams delivering objectives, but it was nevertheless apparent that an entire ethos of evaluation was being shifted:

> *"It's been a difficult difficult, erm, period of, erm, transition for a lot of people in terms of their mind set. Erm, people don't think in outcomes. People think in objectives. And numbers. Erm, how how many bums on seats we've got, etc."* (P4)

Mental wellbeing

Mental wellbeing was another concept that developed during CHIP. Mental wellbeing was cited as 'having a sense of pleasure and purpose in life', 'about having control over your life' 'about being able to make changes in your life' and 'about recognising your abilities and using them'. Some stakeholders described their understanding of mental wellbeing in terms of the 'feel good factor'. This was in contrast to a recognised lack of understanding of the 'theory side' or 'another side' to mental wellbeing:

> *"I think, going back to my answer before, implicitly I knew about mental wellbeing, in terms of physical activity and the feel good factor. Erm, in all honesty the theory side I don't fully understand." (A11)*

> *"And, I mean, maybe because it just seems so apparent to me and so obvious that I think everyone should understand that if you don't feel good in yourself (laughs) then you're not gonna make any changes." (A15)*

There were other levels of understanding mental wellbeing. While some understood it as 'the feel good factor', others described it as something they understood, but struggled to describe:

> *"And, erm, and I understand how it can have contributing, erm, on on other aspects of health improvement. So, just by feeling a bit brighter for 'cause you saw birds this morning ...might encourage you to go for that walk that improves your physical activity that reduces your level your BMI..."* (P4)

Stakeholders also described a lack of consensus on what mental wellbeing was, and a problematic terminology:

"But when people look at wellbeing, unfortunately, they look at the negative side of it as being a an illness or a difficulty rather it being a situation that could make them work more efficiently." (A12)

"They don't, that as a terminology, as a title of of something of something that's meant to mean something, people just don't' get it. They don't they can't connect with that" (P4)

The combination of evaluating mental wellbeing and CHIP facilitating a mental wellbeing project exposed project leaders to knowledge about mental wellbeing and created a convergence of knowledge regarding the utility of mental wellbeing as a health outcome measure during CHIP. As a concept propagated throughout CHIP, learning about mental wellbeing helped develop stakeholder knowledge about health outcomes in general.

The skills required to measure mental wellbeing were felt to be problematic. While 'a lot of good data' were felt to be available, some stated this was beyond their capability, and more to the point, not their job:

"...I don't like all that sort of hard data research and all that..it's not my-it's not my field." (P9)

"I would like like some support on being able to manage the data. 'Cause we've got a lot of data but I'm not a researcher. I can't do statistical analysis. And I think we've got a lot of good data that could be looked at." (A11)

7.2.4.2 Experience and Evidence

Stakeholders talked about experience and evidence strategically and as part of a plan for sustainability. For some, evidence seemed to matter because it enabled stakeholders to make explicit what they already implicitly knew from their own experience- that their projects worked, they just needed to find out how to show it. In

this way, the concept of evidence became about proving the worth of the intervention.

> *"And just because at that time when they went on your programme there wasn't this, erm, light bulb moment, it doesn't mean it didn't make a difference to their lives....But it goes back to the question of well okay then, prove it. So how you prove it, that's the bit I don't know. (A11)*

> *"Well again it's trying to estab- it's one of those things that you feel and you know, but is that going to be received? The people want the, erm, academic and the statistical proof that actually it is in place and it has [worked]." (A12)*

There was a sense of distress conveyed when participants discussed how complex, non-linear risk factors and causal pathways fit into linear mechanisms of change, and how to access this expected 'proof'. This seemed particularly acute for stakeholders whose primary work involved mental wellbeing:

> *" (Laughs) A lot of it is that it's just you can't make the connection... that's the things that frustrates me. You can't say it was your intervention that produced that outcome...And how will we be able to link what any of what I have done or started in Coventry back to the levels of wellbeing that we measure in our Household survey?" (P9)*

> *"Because obviously wellbeing's such a complex area and so many elements go into people's wellbeing. To actually single out the bit that you had the positive effect on, that went on to have the positive output ...would be quite difficult to trace all the way through." (A12)*

This lack of knowledge about how to 'prove' an intervention works sheds light on a previously reported issue of capacity. That is, using mental wellbeing measures as health outcomes built knowledge and capacity in terms of awareness of health

determinants and the rationale supporting outcome evaluation. It also demonstrated a potential deficit of staff who were qualified, capable or motivated to conduct technical multi-component interventions and evaluations.

Evidence

Project and Directorate managers communicated a range of uses of evidence, from development of a project plan to address underserved populations, to using evidence to be innovative.

Interviewees communicated a need for greater evidence use in strategic management and commissioning:

> *"They use their own professional judgement skills. But actually there's a huge evidence base that we have to draw on, but as commissioners they don't necessarily.*
>
> *[Interviewer: What do you think about that?]*
>
> *It's a bit disappointing 'cause you'd hope that providers are more keenly aware of that kind of stuff... And they're completely unaware." (P8)*

Using evidence to develop a programme was unsuccessful for one project due to financial decisions taken before the project scoping was completed:

> *"...And so it wasn't possible to free up resource ...So actually [we] spent quite a lot of time thinking what we might do, to find we couldn't do it. (B4)*

And others conveyed confidence in the methods employed during the planning stages of CHIP because of their incorporation of evidence.

> *"So one of the areas where we realised that evidence was fairly lacking was around ... health weight physical activity. Particularly when you compare it*

with smoking, alcohol, substance misuse, where the evidence base is much stronger around the interventions about what work." (B3)

Evidence was a powerful element in the background of CHIP. It appeared to influence confidence, increase worries about project sustainability, affect 'good' and 'poor' commissioning decisions. Evidence became a currency through which project interventions were valued, but perhaps in a more nebulous rather than concrete way.

Gaining implicit and explicit knowledge

Learning new ways to measure and understand outcomes and evaluate projects was an important aspect of CHIP for stakeholders discussed in other themes. However the reflection on what was learned seemed to reveal a lesson itself, identifying the process of 'becoming aware' and practising partnership as something that happens over time:

"And...I think one of the real positives of CHIP was I think we've got a lot of thinking about how you measure outcomes, how you project manage things, having good project management approaches, which I think has been really, really useful in getting people to think about how do we measure the impact of wellbeing and how do we get capture the process indicators and link them to outcomes measures. And I think people got better at that over the course of it." (B5)

"I think once we'd, kind of, administered a couple of these [WEMWBS] we were, like, yeah it is useful information to know and, erm, so we totally saw the use of of measuring something like that." (A13)

"Erm, I mean, this isn't recurrent funding so you'd expect it to go back to zero, but...I think that the legacy of it is in people's minds that health improvement's important." (B1)

Losing implicit knowledge

Changing personnel was viewed as a limitation to the potential of some projects. Stakeholders' accounts of building momentum for knowledge were reduced when staff left and new staff had to be retrained. The loss of rapport, mutual understanding and implicit knowledge created gaps that structured training or new staff struggled to fill

when lacking the context behind a planning document,

"Whereas the reality was it was like a marker in the sand or a... finger in the air type...Let's specify it in that way, although we all recognise that it might turn out to be quite different. We'd have no, we'd need to build our evidence and see....And then, but somebody else'll come in and see that as that was set in stone... (B4)

when losing implicit knowledge was expressed as a loss of something important, precious even:

"But in the early days it meant a really high turnover of staff.... Which is really hard to...keep the delivery going when you've got that... So a weakness is if we lose the staff it takes a long time to get someone up to that level again...So we're in a quite a precarious it's dependent on keeping who we've got....And that's not a good position to be in....We've got the programmes written out so if someone came in they could deliver it. But it still a long time to get to that level....That is a weakness to the project. We lost the staff, we're in dire straits really." (A11)

Semantic versus actual knowledge & understanding

Some stakeholders felt there was a mismatch between what was written down on paper, or talked about in meetings, and then how practices occurred. This notion is reflected in using terms without a clear understanding of their meaning discussed in theme 1. This included discussing 'ways forward' without acting in forward thinking ways, discussing the use of evidence bases without using them, and unconvincing but 'clever' looking evaluation indicators.

> *"If you look at, sort of, process measures, and outcome measures and impact measures, there there were lots of people buzzing around using all those buzz word, but the people that were being expected to measure them weren't necessarily owning the reasons for them. And so that's taught us a lesson. You need to keep things simple, you need to take people with you." (B1)*

> *"I mean, all the s- all of everything we do in the health service isn't evidence based, ..., err, whilst we have this, kind of, err, err, these high principles, erm, the reality is is that most of the time we do stuff 'cause we think it's a good idea. (B6)*

This stakeholder described the semantic versus actual knowledge as problematic in the approach to new concepts:

> *"But I think people do, and I do get that, particularly from public health here, ...they do get the fact that pub- mental health and wellbeing is a really wal- it is the future and the way to look forward...So I hear that but then I see very much traditional type of approaches.*

> *"But, yeah, so that the problem is we talk, the rhetoric now is about integration. All over the place. But the systems that support that are still totally linear."* (P9)

One stakeholder summarises this idea not so much as a problem, but as an issue of inaccurate expectation. Expecting staff new to the concept of health outcomes to 'get it' over the course of CHIP reflects a more accurate expectation, rather than expecting to achieve conceptual understanding, knowledge diffusion and knowledge utilisation, all within the lifetime of CHIP.

> *"Erm, but as I say, I think, having what we've what we've benefitted from is that we've got an awful lot of people talking in outcomes now, talking about outcomes. Talking about how they can measure their outcomes. Which has been a huge achievement for CHIP. Hasn't necessarily enabled us to measure the outcomes yet. But that mind set change will will be invaluable, in the future." (P4)*

Despite CHIP failing to meet some lofty objectives set early in the programme, it nevertheless achieved demonstrably beneficial developments in staff knowledge, skills and partnership insights.

7.3 CHAPTER DISCUSSION

Fifteen one-on-one interviews were completed out of seventeen requests for interview, with five participants from each stakeholder group. Three main themes emerged. The first theme, 'defining, designing and adapting' represents stakeholders' challenges when communicating using culturally different organisational meaning, introducing new concepts (such as mental wellbeing), designing a programme with implementation and evaluation structures that were both rigid and flexible. 'Practising partnership' reflected how partnership was more of a 'façade' at the programme's commencement, and how, by working through stages of conflict and confusion, stakeholders developed an understanding of what practising partnership meant and achieved clarity on how it could be done. The third theme 'knowledge, learning, and understanding' describes how knowledge, evidence, and experience were used and how critical components of 'new knowledge' came from exposure to mental wellbeing and health outcomes.

I identified gaps between the values and expectations of the different managerial groups. This made practising partnership difficult, and affected the ability of CHIP stakeholders to identify and defuse problems. Part of this difficulty may have been a lack of awareness that differing values existed. The hierarchical structure, different aims and responsibilities and cultural differences of the two organisations created a 'perfect storm' for the sub-optimal implementation of CHIP. Different managerial levels had different aims and objectives and these naturally led to different values, but, crucially, managers in the different levels, lacked explicit knowledge that their values differed. Differences affected interpretations of key terms and concepts and assumptions of each other's roles. Further problems occurred when the hollow rhetoric of 'partnership' was promulgated without a clear plan, procedure, or set of mutually agreed definitions upon which to build the aims, objectives and strategy of CHIP. In a sense, although the evaluation language was shared, it was not a

common language. CHIP stakeholders nevertheless learned lessons about how to implement health improvement interventions in community based settings.

Access to knowledge, challenging assumptions, clarifying definitions and planning and flexible communication structures appeared to enable the development of stronger partnership ties. These ties were portrayed as successful, positive, and central accomplishments in CHIP.

Measuring and understanding mental wellbeing appeared to play a key role in the development of transitional thinking (from 'outputs' to 'outcomes'). A new approach to understanding health and its determinants appeared to have grown out of interviewees' experiences of mental wellbeing- through measurement, and of mental wellbeing outcomes and perhaps through more repeated exposure to the ideas and ethos of measurement of mental wellbeing.

An overarching theme emanating from this analysis suggests that the linear programme structure was incongruent with the complex system which pertained and which stakeholders portrayed through the interviews. Lack of flexibility in managing heterogeneous projects under a homogenous programme banner demonstrated a rigid management and implementation model that was poorly executed at first, perhaps *because* it was implemented in this complex context without due consideration or a lack of awareness of these complexities.

7.3.1 Comparison with other studies

The early CHIP programme plan compartmentalised work and responsibilities (through the creation of 'silos'), which made projects easier to 'construct' and manage but harder to implement in situ, adapt as needed, and share information. Silo-working made inter and intra-organisational partnership activities and

communication more difficult, similar to Axelsson & Axelsson's 'fragmentation of responsibilities'; they found that work organised in this way 'usually leads to efficiency and quality problems of different kinds' or 'integration problems' (Axelsson & Axelsson 2006, p78, see also Davies & MacDonald, 1998). Jacobs and colleagues also found that dominant cultural practices were associated with, and reflected in, performance outcomes (2013). Further support that linear, simplistic strategies do not map on well to complex adaptive systems was identified by Rogers (2008), quoting Eoyang Yellowthunder and Ward, (1998, p3) and provides such clear support that I have replicated the quote here:

> "Everyone involved in making public policy can think about the process as if it were well regulated and linear. Their project plans and shared discourse may revolve around the orderly steps of the problem solving method, which is their espoused theory. In reality, however, they experience the process as a surprising, uncontrolled, and emergent phenomenon. This distinction between espoused theory and experience leads to a variety of unpleasant outcomes. Participants blame themselves or others when the process does not progress as it should. Resources are wasted in pursuit of the perfect and controlled response. Opportunities are missed when serendipity is damped or ignored because it does not fit in the expected scheme. Personal and professional frustration result when well laid plans prove ineffective."

Determining meaning and defining concepts was problematic for CHIP. Tsoukas (2005) discusses the importance of joint or co-determined meanings. In CHIP, it is evident that meanings were not mutually ascribed, but appropriated by each respective organisation and made their own, with seemingly little collaboration or agreement. This caused problems later on, but also made apparent the differing meanings behind words such as 'commissioning' and 'procurement' in differing

organisations. Positively, this process of discovery may have allowed the development of a better understanding of the relevant concepts (Tsoukas, 2005).

The planning, design, and definitions of important concepts in CHIP shaped implementation practices and constructed understanding among CHIP stakeholders.

Partnership transformed during the course of CHIP. At first, 'partnership' appeared as more of a hollow rhetorical exercise, incongruent with other aspects of CHIP's design (e.g. Silo-based working, brinkmanship, lack of consultation during decision making). Taylor-Robinson and colleagues (2012) described facilitators and barriers to partnership working in public health. Facilitators included insider knowledge of organisations, clear aims and objectives, and frameworks for decision-making. Barriers centred on the complex nature of addressing health inequalities across sectors, data collection and management limitations, difficulties arising from perceived values placed on health outcomes in relation to other outcomes. Silo working, language barriers, and the 'packaging of evidence' for different non-health sector audiences were also barriers, mirroring observations from CHIP (Taylor-Robinson et. al., 2012). In CHIP, partnership became more than collaboration on the basis of activities, and enabled different partnerships to shape and share concepts, something also found by Dhillon (2005). Parry and Wright highlight that meaningful partnerships take time, and effort, something also found in this study (Parry and Wright, 2003). Dickinson and colleagues take a more controversial view of this, and call into question whether partnerships will always do more good than harm. They contend that 'current misunderstandings about the nature and potential of partnerships mean that many partnerships are designed in ways which mean that they are unlikely to meet the very high aspirations of those who form them' (2010, p815). This quote suggests that, as in CHIP, misunderstandings are often maintained by assumptions left unchallenged and differing definitions between

groups. This can be seen in the early well-intentioned but difficult to achieve goals of CHIP.

These differences in understanding reflect another finding observed in this study. I observed differences between managerial groups in terms of their values and expectations, coupled with an apparent lack of awareness that these values and expectations might be different. This lack of awareness may have contributed to between-group difficulty in understanding wants, needs, and motives.

In his 2005 work, Tsoukas outlines the key features of organisational social practice as

- being self-referential,
- having a history,
- that members operate and practice in an appreciative system,
- and that it is important to maintain an organisational identity (2005)[10].

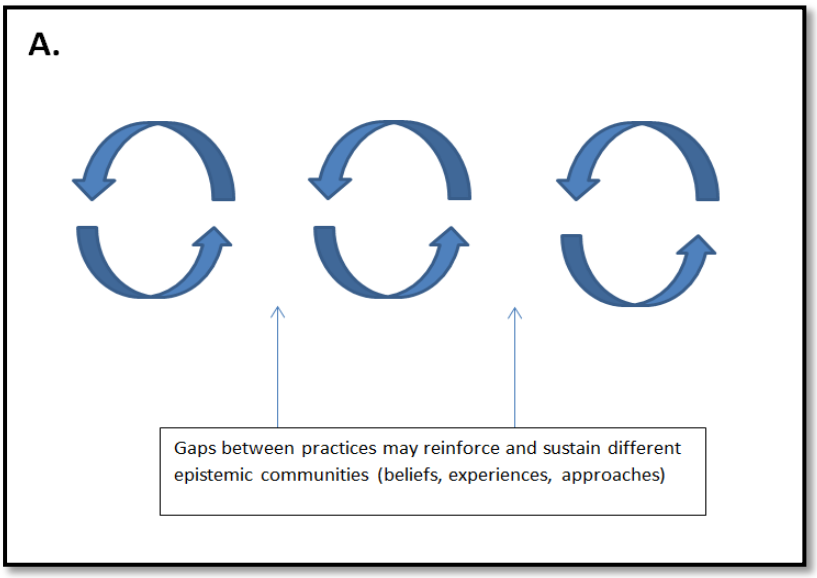
In CHIP, the differences between groups at different managerial levels (almost more so than inter-organisational differences) suggest that practices within groups were self-referential. There is evidence to support Tsoukas's argument that 'the management of change in social practices is as much a conceptual as a technical matter' (p178). Tsoukas outlines two elements important for social change that may explain why change was so challenging for CHIP: 1) social practices are language dependent, and 2) if a social system regularly receives information about other systems or its own functioning, it can overcome the tendency of the system to act and resist changes being made (maintaining identity) (Tsoukas, 2005). In CHIP, these two elements were not clearly defined or communicated between

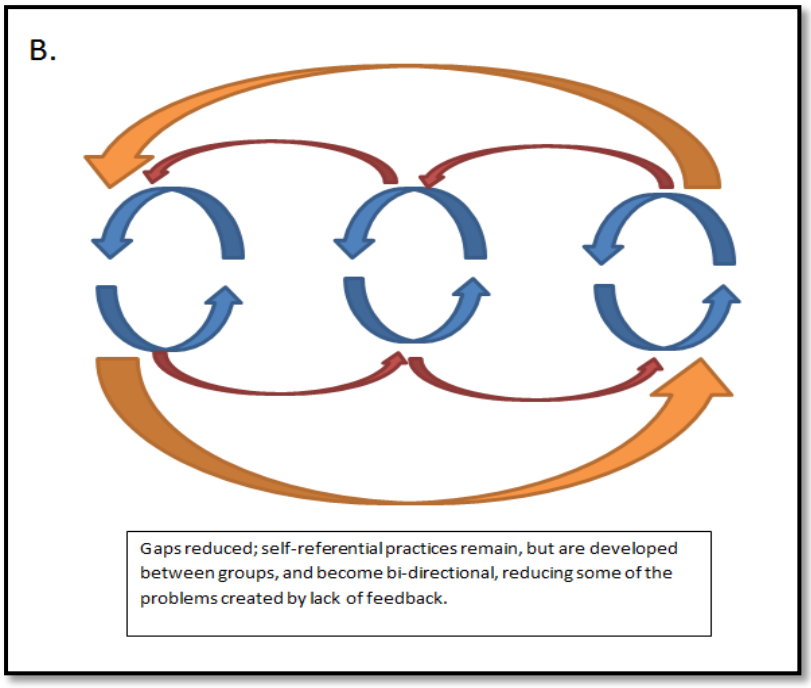
[10] When I discuss the organisation and its members I am referring to members of CHIP, and the public health services associated with CHIP, which includes but does not encompass the entire city council and Coventry NHS. My evidence is taken from CHIP only, and I take this as the 'organisation', with the understanding there are many other members external to CHIP.

organisations and between organisational groups. Individuals in CHIP struggled to define concepts while implicitly expecting them to be commonly understood, reflecting a weakness expressed in Tsoukas' first element of change. Second, CHIP stakeholders may have struggled to define these new concepts because of their rapid introduction and a lack of co-operative communication between directorate stakeholders and programme, project, and intervention stakeholders, reflecting a weak second element of change- common self-referential practices *between the groups*.

CHIP facilitated and maintained self-referential practice *within* groups (e.g. the difference between directorate stakeholders concerned with sustaining ideas, compared to project manager-stakeholders concerned with sustaining 'their' intervention) but struggled to develop strong two-way communication systems *between* organisational groups, thereby creating gaps in the communication of a "coherent, plausible and legitimate discourse" between groups (Tsoukas, p178). In CHIP this development seemed to happen within groups but there was little evidence to suggest this development was commonplace between groups. Figure 19, parts A and B illustrate this.

Figure 19: Within and between-group gaps in practice





These self-referential practices may be a symptom of and/or a contributor to the 'silos' observed in CHIP. These gaps may maintain the 'otherisation' of new ideas or groups in an atmosphere that is already 'fragile and volatile', which may require 'constant nurturing in order to survive' (Axelsson & Axelsson, 2006, p86; Kislov, Harvey, Walshe, 2011).

Despite these issues regarding the partnership and inter-organisational working in CHIP, there were positive consequences which came from the development and subsequent destruction of these barriers to working and understanding concepts. CHIP stakeholders *made* CHIP work, as they worked through the challenges, an idea central to the process of practice as Tsoukas described in 2002 (Tsoukas, 2002). Stakeholders spoke confidently of the accomplishments of CHIP as a process and as a partnership, rather than in relation to the structured objectives on paper. It is possible that without going through this challenge, partnerships may not have become as robust as they were by the end of CHIP.

The introduction of mental wellbeing as a measurable health outcome brought together project stakeholders in CHIP. The meaning of mental wellbeing was at times the subject of confusion and scepticism, often used rhetorically in the early stages of CHIP, seeming to hold little actual meaning or value, other than in its strategic or 'tactical' utility (Weiss, 1979). Dhillon (2005) lends credence to rhetorical practises as problematic, finding that rhetorical exercises tend to cause more problems than facilitate the progressive ideas they espouse. Hawe and others elude to the problems of rhetoric in designing interventions and their evaluations stating that 'the causal assumptions and principles that govern decision-making in the intervention, which may or may not match the rhetoric of the theory claimed to inform the intervention design' (Hawe, Shiell, Riley, Gold, 2004, p789).

As mentioned above, mental wellbeing as a concept was transformed during the course of CHIP. Over time, mental wellbeing became a central conceptual hub around which a common understanding of health was facilitated. A new approach to understanding health and its determinants appeared to grow out of interviewees' experiences and practises of mental wellbeing – in different contexts, from different

people, for different purposes. Some viewed the notion of mental wellbeing with scepticism and hesitancy at the beginning of CHIP (perhaps due to the rhetorical promotion without constructive explanation), and over time, these views seemed to give way to understanding the relevance and role of the concept for overall health improvement. Over time, I think stakeholders came to view mental wellbeing as an integral part of *health*, possibly as a unifying factor moving from 'outputs focused' aims to 'outcomes focused' aims. It would appear that, for some, CHIP enabled mental wellbeing to become more than just another word for 'happy'.

'Practise' was a crucial component in the shift from outputs to outcomes, aiding the shift from rhetoric to meaning for 'mental wellbeing'. Stakeholders were introduced to the concept, they used WEMWBS to measure it in their evaluations, they reflected on the findings, and for those who observed participants' completion of WEMWBS, reported seeing the *value* in measuring the concept. The experience of mental wellbeing in practice in CHIP seemed to reify the concept, moving beyond rhetorical support for mental wellbeing as something that should be addressed, to something that was discussed, measured, practised, reported, and ultimately understood. It linked conceptual understanding with practical understanding and utility through measurement. This focus of CHIP on mental wellbeing reinforced it as a health outcome, making it a catalyst as 'proliferating knowledge and enthusiasm' as well as technical support and purpose (Rogers, 1962).

The role of mental wellbeing can be seen in another context. As Aaron Antonovsky said in 1996:

> *"...to put it in information-systems theory terms, the stimuli bombarding one from the inner and outer environments were perceived as information rather than as noise. These strands of thought led to the emergence of the sense of coherence (SOC) construct, a generalized orientation toward the world*

which perceives it, on a continuum, as comprehensible, manageable and meaningful." (p 15)

In the same way as Antonovsky describes here, the concept of mental wellbeing was bombarding stakeholders from the inner and outer environments, and where it may have just been *noise* at times it began to be perceived as *information* over time, thus becoming more comprehensible, manageable, and meaningful.

The findings from phase II suggest that the impetus for including mental wellbeing into the ethos of CHIP and into the planning and strategic communications was successful. I would argue however that this success did not look like the success planners had anticipated.

7.3.2 CHIP in the Context of UK Health Improvement Programmes

How can CHIP be situated in the larger body of UK public health interventions?

Here I describe key evaluations of national health improvement programmes in the UK. I draw out similarities between CHIP evaluation 'lessons' and selected lessons from Sure Start, Health Action Zones, and New Deal for Communities.

7.3.2.1 Sure Start

Sure Start was a New Labour Area Based Initiative (ABI) to support early intervention for child development in the 20% most deprived areas in the UK. Sure Start Centres were meant to bring together health, childcare, play, early education and parental support to families of children under 4 years old in local areas (Belsky

et al, 2007). In England, an estimated 187,000 children were to be supported within 250 Sure Start programme units over 10 years.

The National Evaluation of Sure Start (NESS) included a longitudinal survey of Sure Start Centres, case studies conducted within 10% of the centres, and 'themed' qualitative studies within selected centres.

The impact of Sure Start was evaluated by considering three imperatives:

- Facilitate access to services
- Encourage better collaboration
- Develop new ways of working

NESS findings

Sure Start showed some evidence of success improving outcomes amongst children in deprived areas. The proportion of children residing in poverty declined, exclusions from schools declined and health screening of young children increased in SSLP areas over time, among other successes (Barnes, 2007).However, these improvements were seen more frequently among children and families that were moderately deprived, and who had more 'personal, social and economic resources' than severely deprived families with fewer resources (Belsky, Barnes, Melhuish, 2007).

Belsky and colleagues' evaluation efforts were limited by government changes halfway through the programme making it impossible to tell whether and to what extent SSLPs were efficacious or which elements of the programme were most beneficial (Belsky et al 2007). NESS qualitative studies highlighted local-level issues and experiences

CHIP in the Context of NESS

Three challenges emerged from considering CHIP and NESS evaluation findings together. These themes appear to have far reaching consequences for both evaluations: 1) contradictions between rhetoric and reality of practice 2) the marginalisation of stakeholders 3) capacity of staff.

Contradiction

The rhetoric of Sure Start suggested greater control and inclusion of local people in SSLPs, but this was not always the case in practice. For example, individuals or organisations that had less time and fewer organisational resources were left out of the 'competition' for SSLP resources early on in the programme. In cases where SSLP spaces were dominated by professional SS staff, the lack of community-centred room for parents did not meet the expectations held about who or what the SSLP spaces were meant for.

Similarly, commissioning of CHIP interventions and events reflected funding allocation before project leaders had an opportunity to develop their project approaches. The underlying aims of CHIP were to develop innovative projects and use evidence where possible, so the fixed nature and lack of flexibility contradicted the 'spirit' of CHIP, and consequently *"it alienated people"* (CHIP Interviewee).

Marginalisation

Both CHIP and NESS evaluations illustrated how the marginalisation of stakeholders (CHIP staff, SSLP community members) acted as a limiting factor to implementing and evaluating the programmes.

For some individuals in SSLP areas, fear and anxiety over the potential removal of their children reportedly acted as a deterrent to accessing services from SSLPs (Anning & Ball, 2007). In CHIP, staff who closely managed interventions expressed

frustration with higher management decisions when their input was marginalised or disregarded.

Capacity

NESS and CHIP evaluations identified that relationships that already existed prior to SSLP or CHIP had less 'distance to travel' implementation-wise. These types of projects took less time to establish, and were built on existing trust networks. This gave them more time to conduct formative evaluations (informally and formally) and adjust services accordingly. Projects starting anew had comparatively more ground to cover in the same amount of time. When SSLPs experienced time and capacity pressures, the core characteristic of Sure Start, empowerment, "tended to wither first" (Anning and Ball, 2007, p107). In the alcohol programme in CHIP, some staff reached a capacity limit, later found to act as barriers to evaluation fidelity. Hopelessness and frustration were also discussed in this context *"Every day was just, you're just pulling you hair out." (*CHIP interviewee).

Both Sure Start and CHIP evaluations have shown that in terms of co-producing services, (whether with service users and other local organisations or an inter-organisational project) establishing trust between and within stakeholder groups was a powerful facilitator of successful programme implementation, and time was required to build that trust, especially in interventions or services developed 'from scratch'.

These challenges may ultimately be reduced to issues that undermine trust: trust in the staff to support the community, in community members to access the services, and in decision-makers to act in the best interests of the goals of Sure Start or CHIP. Experiences that undermine trust have an important, though difficult to quantify, impact on programmes that depend on strong partnerships between various stakeholders.

7.3.2.2 Health Action Zones

Health Action Zones (HAZ) were another ABI established to develop cross-sector working with the common goal to reduce health inequalities and improve health. HAZ were meant to bring together local health and social care organisations to agree a mutually beneficial strategy for population health improvement (Department of Health, 1997). Beginning in 1997, 26 local partnerships were granted HAZ status, with an investment of £5 to 7 million in each zone annually. HAZ partnerships were funded for 7 years. There was much variation within the HAZ in terms of geographical location, partnership boundaries, and size (Sullivan, Judge, Sewel, 2004). The HAZ were nationally evaluated using a 'Theories of Change' approach (Connell and Kubisch, 1998). HAZ aims were to:

- Create capacity for local collaboration
- Adopt change mechanisms
- Modernise services
- Reduce health inequalities (Judge, Bauld, 2005)

HAZ evaluation findings

The evaluation of HAZ revealed that although there was little measureable improvement in overall health outcomes, there was considerable headway made in terms of their first programme aim, building capacity for cross-partnership working. HAZ also appeared to raise awareness of health inequalities (Judge, 2005).

Both HAZ and CHIP aimed to make changes to operational structures and health services through cross-partnership working. Both found little observable change in measured outcomes at a population level, but stakeholders came away from the

programmes more knowledgeable about the origins of the aims, and about what it meant to work collaboratively (Barnes et al, 2005).

Collaboration

The theme of partnership and the aim to 'build collaborative capacity' through HAZ were also key challenges for CHIP (see quotes below). Sullivan described key concepts required for developing and sustaining good collaboration from the HAZ evaluation (2005). I Sullivan's points are illustrated with quotes from CHIP:

Good collaboration requires individual and organisational **trust,**

"You need that that ability to work together, to trust each other."

strong leadership that spans both individual and organisational boundaries,

"I think ultimately [not having a unified view] de-energises the partnership and limits the achievements, really"

and a good '**fit**' between investment in the collaboration and the context in which it is situated. I see this as reciprocal dissemination of benefits for each stakeholder group.

"So they'll tell you what to do. But there doesn't seem to be any leeway to say well actually we're on the ground and I don't think that's gonna work." (A11)

While the rhetoric of both the HAZ and CHIP programme materials promoted the collaborative approaches of teams, networks, and partnerships, evidence from both CHIP and HAZ show that individuals who underpin the networks can 'make or break' the successes of those partnerships - as leaders, as 'reticulists' (boundary-spanners), as those who promote trust through being reliable, and finally, as those individuals who have a personal and professional interest in collaboration. As shown in the illustrative quotes above, these aspects of collaboration needed to be

personalised and ‘championed’ in order to make clear the meaning and purpose of collaboration.

Development

CHIP and HAZ went through similar phases of development. Early stages of HAZ were characterised with words such as ‘manic’ ‘chaotic’ and frantic’, middle stages characterised by ‘dealing with change’ ‘new style of leadership’ ‘reconfiguration’ and ‘revamping’; finally ending with stages characterised by ‘the concept, not the label’ ‘future beyond HAZ’ ‘HAZ destabilising’ and ‘dissemination and learning’ (Sullivan et al,. 2005, p92-93). These key words represent stages identified in CHIP evaluation: ‘conflict, confusion and clarity’. Both programmes reflect tumultuous atmospheres of action, decision, communication and in the end, acceptance and learning.

Impact

Bauld (2005) suggests that three types of factors can ‘limit the identification and collection of evidence’- political, technical, and cultural. However, a different interpretation of these factors reflects a ‘realpolitik’ approach. Realpolitik refers to practical objectives rather than ideal, ethical, or theoretical objectives – it offers a way of examining these factors in the context of ‘things as they are’ (and therefore how they may impact the identification and collection of evidence). From this approach, it could be argued that no impact can exist in isolation from political, technical, and cultural factors These factors cannot be neglected, avoided or excluded from the implementation of interventions. A recent article by Petticrew and colleagues, suggests that more attention should be paid to how processes and mechanisms can affect the improvement of health and be observed in health outcomes (2013). This moves thinking on the topic beyond the recognition of important issues as Bauld (2005) necessarily does, into the realm of action, which

could be supported using a realpolitik approach to defining and better understanding perceived 'impact-limiting' factors.

7.3.2.3 New Deal for Communities

New Deal for Communities was another ABI established by New Labour beginning in 1997. Between 1998 and 2010, 39 NDC partnerships were created to reduce the gap between the poorest communities and 'the rest of the country' (Laweless, 2011). The NDCs differed from other ABI's in that they ran for 10 years and had an investment of approximately £50 million pounds for each area, making them larger and longer than previous similar initiatives. NDCs were meant to create positive changes in 'places' (Crime, housing and environment) and among 'people' (health, education, reduction in worklessness). The NDC tended to differ from SSLPs and HAZs in how it was structured – it had a longer lead time to develop plans to commission services with community stakeholders.

The NDC evaluation used cross-sectional and longitudinal samples to evaluate impact. These were compared with similarly deprived non-NDC communities. The surveys measure a period from 2002 to 2008. A process evaluation and synthesis of area reports were also conducted.

NDC evaluation Findings

Of the 39 indicators measured, all but 4 assessed attitudes of survey participants. There were some clear improvements in NDC areas compared to earlier measurement, national mean changes and non-NDC areas. These positive changes included increased used of burglar alarms, increased proportion of respondents agreeing that NDC has improved area, and a decrease in the proportion of participants in NDC areas with an income <£100 per week (Lawless, 2006). Lawless also addressed the issue of upward social mobility and the effect which that

can have on neighbourhood renewal (when those who can afford to leave, do leave).

There were barriers identified in the programme process evaluation. Lawless paints a picture of key issues, which CHIP issues mirror, particularly regarding politicised decision-making.

- 'quick-win' focused decision-making (suggesting this is caused by a high number of local individuals on decision boards)
- Contradictory objectives (increasing house prices in certain areas that would be detrimental to others)
- Wide-ranging and far reaching number and type of outcomes
- Outcome targets were under-resourced (e.g. job creation)

NDC and CHIP

Lawless described the NDC that was "...characterised as a model based on decentralisation, local negotiation, and neighbourhood-level introversion. By around 2004, it was more realistic to see it as a centrally imposed, locally effected, delivery vehicle." (Lawless, 2006). Dinham further suggests that local residents within some NDC communities felt that NDC jobs and roles were filled by professional staff, with the presumption that there should have been more community members in these roles, highlighting the contradiction between the NDC ideal (community-driven), and the reality (professionally-led) (Dinham, 2005). Foley and Martin (2000) contend that imbalances like these were due to the unrealistic goal for communities to achieve wholesale change in deprived environments where underlying causes of exclusion were out of their control.

This notion of 'handing over control' echoes perceptions identified in CHIP interviews. There were ideal objectives and ideal processes expected of CHIP staff, but the reality was that some important decisions were politicised earlier in the decision making process, such that decisions had already been made, and only the perception of control over decisions remained intact at the point services were commissioned.

"...And so it wasn't possible to free up resource ...So actually [we] spent quite a lot of time thinking what we might do, to find we couldn't do it. – CHIP Interviewee

The important parallel to draw between NDC and CHIP in this case may be the politicisation of community-involved partnerships and perceived versus actual control over decision making. CHIP may not have been required to involve members of the community per se, but it required the consideration of important local stakeholders from a mix of private and charitable service providers, all of whom had different perspectives and expertise to bring to the collaboration. Greater transparency in the process of planning, commissioning and structuring programme services may be beneficial in future programmes. A more 'realistic' reflection on partnership might also consider political posturing as a mechanism that affects decisions and galvanises groups and that may indirectly affect health objectives or outcomes.

Summary

Each of these programmes aimed to make large, cross-sector improvements to services, health and society. Taking into account the differences in investment, time and staff, the programmes were similar in that they aimed to achieve such ambitious goals which diverged tactics so substantially from the way services were operating at the time. Challenges that undermined the full potential of these types of programmes included interpersonal relationship breakdowns, eroding trust, time

pressure, or the subtle but powerful inequality of provision of services or sharing of resources (space, control, power) between a range of community and staff stakeholders.

A key to understanding facilitators and barriers to achieving the desired outcomes come from Pawson and Tilley's notion of 'operating context' (1997). The context in which the programmes played out enables evaluators to understand 'how?' and 'why?' and NESS, HAZ and NDC evaluations went to great lengths to achieve that understanding.

"These challenges were not unique...and have been and continue to be faced by others" (Meadows, 2007, p65). This phrase encapsulates the core likeness between these examples of national health improvement intervention evaluations and the lessons learned from CHIP. Petticrew deconstructs the concerns for evaluating complex interventions robustly and in doing so reflects many of the challenges and barriers identified and discussed here (Petticrew et al, 2013). Petticrew and colleagues also discuss how future complex evaluations should incorporate 'a clear conceptualisation of the intervention and its processes' and this includes the mechanisms through which objectives are achieved (2013).

7.3.3 Strengths and Limitations

Creswell (2009) identified 6 aspects of qualitative reliability and validity which I addressed in my methods section and which I discuss here.

It was a strength that I identified transcription mistakes iteratively at multiple points in the process of coding and analysing the data. I verified potential mistakes with digital recording of interviews where confusion existed.

I did not let my codes 'drift' in their meaning. My technique for coding was rigorous because I approached the task in steps, cross-checking my codes with my electronic and hard copy notes in my first three coded interviews. I then revised codes that didn't fit, re-grouping, re-labelling and re-organising codes before I coded the remaining interviews. I revised codes in the same way throughout the analysis to ensure the consistency of their meaning.

My analysis included an independent cross-checker to blind code one interview. The codes from the independent qualitative researcher and my codes were compared in a face to face meeting and we discussed the similarities and differences, where we mutually agreed revision of the codes was not needed. There is some debate as to the usefulness of 'inter-rater reliability' in qualitative research (Pope, Ziebland, Mays, 2000; Madill, Jordan, and Shirley, 2000; Joffe & Yardley, 2003) namely that because all views are to varying degrees subjective, each adds something the other cannot, and in doing so flag up different perspectives. From this perspective, the proportion of agreement is not necessarily a good thing where a diversity of view may add a previously unknown insight to the analysis.

It is a strength that I clarified my potential biases in the study. This is particularly relevant to my study because of my dual-natured role: part evaluator-team-member, and part researcher. I conducted my interviews maintaining an objective or neutral attitude, but my 'insider' position may have enabled me to build rapport with interviewees sooner. I further coded where 'insider' discourse occurred during interviewing, and these codes helped me to recognise when my insider role was 'cropping up' and that I needed to consider this in my analysis. These 'reflexivity-maintenance' codes were labelled 'mutual memory' (denoting a shared past experience such as a meeting mutually attended) and 'interviewer interaction' (where the interviewee and I discuss a third party or something related to my duties as part of the CHIP team).

It was important that I maintain good ethical standards and involve the interviewees in confirming the findings. I therefore 'member-checked' my emerging themes with 14/15 interviewees (one moved to another job), to ensure they found them true to their experiences and were comfortable with the content. I received no requests for changes to be made.

Throughout my analysis, I aimed to ensure that a range of views were represented in each of the themes. There were many views among interviewees, some were contradictory, some were controversial; some were revealing and others much less so. I took this range of views as a marker for an acceptable degree of transparency and honesty among the interviewees.

There are some limitations to this qualitative study. I did not interview CHIP intervention participants. Interviewing participants could have added another perspective on CHIP and enabled a comparison of participant's views of their intervention with the findings from the evaluations. Another limitation is that I did not explicitly address the role of Household Survey in the interview guide. While some interviewees mention the survey, it would have benefitted this study to have more closely addressed their views on the survey.

This a relatively small sample size for a qualitative thematic analysis. Pragmatically, this number depends on the questions being addressed, for example a phenomenological study might interview 5 people in great depth, whereas a study trying to identify an emerging theory of health decision-making in an Asian community may interview 50 or more people using a grounded theory approach. I interviewed the participants who had knowledge and experiences related to the CHIP interventions which were evaluating mental wellbeing and I covered a range of managerial positions providing a well-rounded, purposive sample.

In this chapter I have reported the methods and qualitative analytical techniques and discussed the findings of my qualitative investigation. In the next chapter I combine quantitative and qualitative findings and discuss them in terms of process and implementation issues observed in CHIP.

CHAPTER 8: QUANTITATIVE AND QUALITATIVE INTEGRATION

8.0 QUANTITATIVE AND QUALITATIVE INTEGRATION

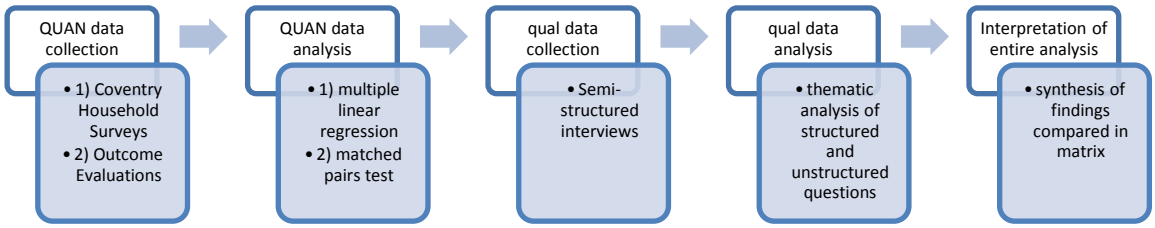
In this chapter I combine the quantitative survey, evaluation findings and qualitative stakeholder interview findings. First I discuss the quasi-experimental evaluation findings using data from the quantitative survey. Second I present a mixed methods matrix of the evaluation findings and qualitative stakeholder interviews and describe the integrated findings and relate them to the implementation of each project. Finally I discuss the main findings of the integration overall.

8.1 INTEGRATION METHODS

I used a combination of approaches to mix/integrate methods in this study. I use the terms 'mix' and 'integrate' synonymously.

8.1.1 Stages of collection and analysis

As explained in my methodology, I first designed my stages of sequential collection and analysis (Figure 12 from Chapter 4 is repeated here to illustrate this design):

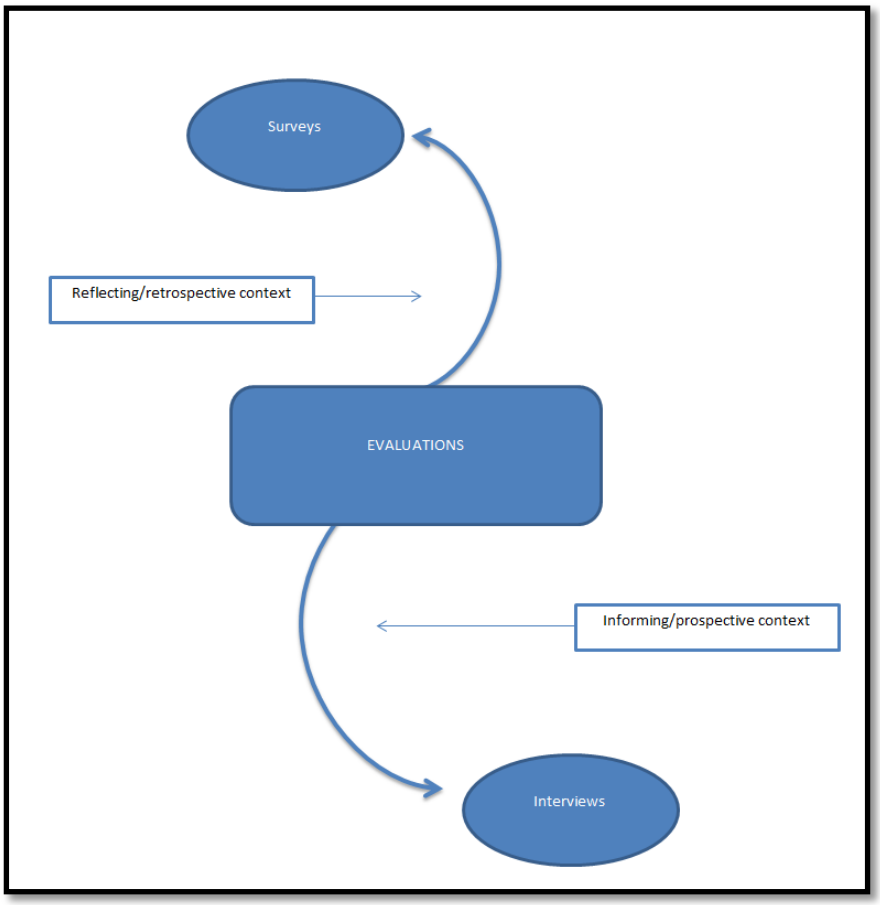


8.1.2 Integration process

The overall integration process reflects how the evaluation data act as the common point of convergence for all three methods. The surveys informed the evaluations,

and the evaluations informed the content of the interviews. The surveys and interviews were not integrated. Figure 20 shows the overall integration approach.

Figure 20: Overall integration approach



8.1.2.1 'QUANT-QUANT'

Quantitative survey data and quantitative evaluations were integrated numerically. The purpose of this integration was to identify relative comparators for intervention populations and to place the findings from the evaluations in the context of a larger sample of Coventry residents. Descriptive data and mean WEMWBS score were examined.

8.1.2.2 'QUANT-qual'

I integrated the findings at the interpretation stage using a mixed methods matrix (O'Cathain, Murphy & Nicholl, 2010). A mixed methods matrix is a technique used when qualitative and quantitative data exist for the same cases and can be studied together. I have defined the 'cases' here as each intervention subject area: Alcohol, Wellbeing Mentors, Physical Activity (OBOL & FAAF). Evaluation data (Chapter 6) and interviews with managers of evaluated projects (Chapter 7) existed and were considered together. I focused on empirical evaluation challenges and barriers, and asked, 'what impact might these evaluation challenges and barriers have had on the evaluation and on other aspects of project implementation?' I defined a 'challenge or barrier' as a something that slowed down the evaluation, made the evaluation more difficult to execute, created problems or inaccuracies in evaluation outputs, or something that interviewees deemed a challenge or barrier associated with the evaluation. I then discuss the implications of these evaluation barriers for overall project implementation in the results section.

My approach is an adaptation of the mixed methods matrix outlined by O'Cathain, Murphy & Nicholl (2010), demonstrated by Wendler (2001) and originally conceptualised for mixing methods by Miles and Huberman (1994). I adapted the approach by integrating previously analysed findings (from Chapters 5, 6, and 7) using the matrix as a frame to focus on the 'third effort' technique more commonly used for a triangulation protocol (O'Cathain, Murphy & Nicholl, 2008a; 2010).

8.1.3 Matrix development

I reflected on the evaluation of CHIP interventions and listed related challenges in the matrix. I treated barriers identified in the quantitative data as my 'start point' and from that point I developed the matrix in stages. I consider this a 'Pillar' technique and process for mixed method matrix development.

Stage 1: For each case, quantitative barriers were identified and listed in column 2 (e.g. Data collection: loss to follow up, miss-coded data resulted in increase in invalid data returned).

Stage 2: In column 4, I 'matched' the qualitative data reflecting information, context, setting and any other content that might be related to the quantitative barriers in focus (in column 2).

Stage 3: Continuing to develop column 4, I added further case-specific barriers identified from qualitative findings. This produced a list of qualitative barriers not yet matched to quantitative barriers.

Stage 4: Next, I organised those unmatched qualitative barriers to match up with the quantitative barriers.

Stage 5: Any 'gaps' where barriers from either column 2 or 4 had no 'match' across the row were cross checked for completeness. Qualitative data were checked through for references to the quantitative barrier in question, and vice versa.

Stage 6: Finally, I examined columns 2 and 4 and listed evaluation or implementation 'issues' which reflected the qualitative and quantitative information gathered – these issues makes up column 3, 'the pillar' (e.g. Issues: skills, capacity). The issues draw on the following: the findings themselves, Rychetnik (2002) criteria for evaluating public health intervention evidence, Linnen and Steckler's work on public health process evaluation (2002), Rogers' work on programme theory and its use for complex interventions (2008), and Hawe's work on theorising interventions as events in systems (2009). From this stage, I used the matrix to describe the evaluation and implementation issues synthesised from quantitative and qualitative findings.

8.2 RESULTS: 'QUANT- QUANT' INTEGRATION.

In this section I discuss the results of interpreting the CHIP intervention evaluations in the context of the cross-sectional survey findings.

8.2.1 Wellbeing Mentors

Because the survey data were collected from the adult population, no relative comparisons could be made between WEMWBS scores and cross-sectional findings for this intervention which was undertaken in teenagers. However, I gained permission to use WEMWBS data from three schools in the same geographical areas of Coventry (n=753) collected in 2008 (Clarke, et. al., 2011). The comparison sample included young people age 12-16 years of age. I used these comparison data to gauge how similar or different mentee's WEMWBS scores were from this geographic and age-comparable population.

The population comparator showed a mean WEMWBS score 48.8 (SD 6.8) (Clarke et. al., 2011). The WBM intervention baseline WEMWBS was statistically significantly lower at 43.1 (SD 12.2, $p<0.001$). The mean score increased to 48.6 (SD 9.7) at intervention completion and increased beyond the population comparator mean score after adjustment for RTM, increasing to 53.3 (SD 9.4) at the 10 week follow-up.

Variable	N	Mean (95%CI)
WBM @Baseline	67	43.1 (40.1, 46.1)
WBM @10 week follow up	63	53.3 (50.9, 55.7)
Population Sample	753	48.8 (48.1, 49.3)

The WBM 10 week follow up score is statistically significantly higher than the mean population score. The interquartile range for the population sample was 43-55. The comparison shows that the mean WEMWBS scores for WBM samples were at the lower limit of the interquartile range before the intervention. The intervention mean

scores were at the upper limit of the interquartile range, but did not exceed it, at the 10 week follow up.

Compared to an age- and location-comparable population, mentored pupils had lower average levels of mental wellbeing than the comparator mean before they began mentoring, showed improved in WEMWBS scores consistent with the comparator mean at completion, and made further improvements which exceeded the mean WEMWBS score of the comparator population by the intervention's 10 week follow up.

8.2.2 One Body One Life

WEMWBS data collected from OBOL participants and the Coventry Household Surveys were compared.

Mean baseline WEMWBS scores for OBOL participants (47.8, SD 9.8) were lower than the mean WEMWBS scores from the survey from each year, (where scores ranged from 51.2 (SD 8.9) to 54.1 (SD 8.9)). OBOL mean completion (52, SD 8.6) and follow up (51.1, SD 8.1) WEMWBS scores were comparable to the population level scores. Interquartile means ranged from 46-57 (2010) to 47-57 (2011), and 49-60 (2012).

OBOL participants had significantly lower mean mental wellbeing levels at baseline than the population comparator in 2010, 2011 and 2012 ($p<0.001$), but there were no statistically significant differences between OBOL mean scores at completion and the 2010 ($p=0.13$) and 2011 ($p=0.70$) means, or follow up OBOL mean scores and 2010 ($p=0.90$) and 2011 ($p=0.39$) means. Compared to the 2012 sample, OBOL mean scores at all time-points were lower than the 2012 population mean (Table 33).

Table 33: CHS and OBOL mean WEMWBS scores		
Variable	**N**	**WEMWBS (95% CI)**
CHS valid sample		
2010	3370	51.2 (50.9, 51.5)
2011	2707	51.8 (51.6, 52.2)
2012	2111	54.1 (53.7, 54.4)
OBOL baseline	481	47.8 (46.9, 48.7)
OBOL completion	307	52.0 (51.0, 53.0)
OBOL follow Up	121	51.1 (49.6, 52.6)

8.2.3 Fit as a Fiddle

The scores for FAAF participants were lower on average than for Coventry as a whole, ranging from 41.6 to 45.7 at the 12 week follow up. Comparable age subgroups from the population survey data showed FAAF participants had significantly lower WEMWBS scores at each time point data were collected.

Survey data from 2010, 2011 and 2012 age groups 55+ showed mean WEMWBS scores that ranged from 48.3 in the 80+ age group in 2010 to 53.2 among 55 to 64 year olds in 2012. All of these mean scores were considerably higher than those observed in FAAF (Table X).

Table 34: Mean WEMWBS score by age group in Coventry			
Variable	**2010 mean WEMWBS**	**2011 mean WEMWBS**	**2012 mean WEMWBS**
Total sample	51.2	51.8	54.1
Age Band			
55-59	50.7	50.1	53.2
60-64	50.8	51.6	53.2
65-79	51.7	50.6	--
80+	48.3	49.5	51.0

When I examined population mean WEMWBS scores for respondents aged 65+ (reflecting 80% of the FAAF sample), I found that baseline FAAF scores were statistically significantly lower than all three survey WEMWBS means ($p<0.01$). However, FAAF participants' mean scores at follow up fell within all three interquartile ranges for each survey year (in 2012 it is the upper confidence limit of

the FAAF WEMWBS score that falls within the population range). The population interquartile ranges were: 45-58 (2010), 45-56 (2011) and 47-58 (2012).

Table 35: CHS and FAAF mean WEMWBS scores		
Variable	**N**	**mean WEMWBS (95% CI)**
65+ CHS samples		
2010	693	50.9 (50.2, 51.6)
2011	428	50.2 (49.4, 51.1)
2012	403	52.5 (51.6, 53.3)
FAAF baseline	40	41.6 (38.5, 44.7)
FAAF 12 weeks	39	45.7 (42.2, 49.2)

Participants motivated to attend and complete FAAF had significantly lower levels of mental wellbeing than relevant general population levels (aged 55+) and were lower than WEMWBS levels for the population age group which most closely reflected the ages of actual FAAF participants (65+). Over time WEMWBS scores increased among FAAF participants, however they remained significantly lower than population means, while improving to within the inter-quartile range of the population samples.

Summary of findings

In this section I contextualised evaluation findings with survey data from the Coventry Household Surveys and, in the case of WBM, with an age and location matched comparator (Clarke, et. al. 2011). This allowed me to examine mental wellbeing levels of community health intervention participants motivated to attend interventions alongside their population-level 'peers', and describe the relative differences in levels of mental wellbeing. The result of the comparisons were different for each intervention.

Wellbeing Mentors participants showed higher WEMWBS scores than the population comparator at their 10 week follow up. Regression to the mean

attenuated this effect somewhat, but scores remained above the comparator mean. OBOL participants had mean levels of mental wellbeing significantly lower than the population mean at baseline, and increased to comparable population mean levels at their 3 month follow up. The mental wellbeing of FAAF participants at baseline was lower than the other intervention baseline scores, and did not meet or exceed comparable population mean WEMWBS scores at any time point.

The findings suggest that people attending CHIP interventions had significantly lower levels of mental wellbeing than their population comparators regardless of whether the intervention focused on mental wellbeing or not. It also suggests that patterns identified in the survey for age groups are reflected in these smaller, purposive intervention samples as well, particularly reflected in the considerably lower scores and smaller change in the older people taking part in FAAF.

The findings also suggest that in a spending environment with scarce public health resources, it may be good to reach groups with lower mental wellbeing than their age-related population comparators, in order to reduce inequalities.

8.3 RESULTS: INTEGRATING EVALUATION AND INTERVIEW FINDINGS

In this section I examine the relationship between selected CHIP evaluations (Chapter 6) and stakeholder interviews (Chapter 7). I compare evaluation issues identified during quantitative analysis alongside those identified during qualitative analysis.

The three projects are identified in the first column, the quantitative issues in the second column, the type of evaluation issue in the third column, and the qualitative issues in the fourth column. Issues not identified using a particular method are marked as such. I have combined OBOL and FAAF together in the table as ‘Physical Activity’.

	QUANTIATIVE Evaluations	Issue identified	QUALITATIVE Interview quotations
Alcohol		-PILLAR-	
	SDC did not use correct forms to identify clients and track their evaluations	Evaluation adherence	Not identified
	ATR evaluation forms 'went missing', and returned no valid forms	Evaluation adherence	*"Well half the files weren't in there anyway 'cause they'd been archived somewhere."*
		Organisational space & design	*"And we were said, we were told no, just put them in the individual case's file. And I thought when we come to collate this information how we gonna get it."*
	Not identified	Capacity	*"Just, sort of, workload. And it was like another thing that we were being asked to do and…"*
			"...but we had like five things to do for different questionnaires"
			Every day was just, you're just pulling you hair out.
	Not identified	Time	*"it was introduced to us at quite a difficult time."*
	Not identified	Communication	*"No, it was just, kind of… do this, please."*
			" …So it was just, do this, do that.
	Not identified	Organisational Culture	*"there was always a bit of a turf war to read between because they had to take referrals from existing treatment services that did things on a one-to-one basis. Largely. They took some self-referrals, but most people'd come as a referral from someone else and there was a bit of an antagonistic relationship between them."*
			"You will get a small number of people who refer the vast majority. Which does lead to a bit of a question mark about management, individual management, 'cause actually that means it's almost a postcode lottery"
	Not identified	Beliefs	*"There had always been...I don't know what to call it. An urban myth. A local urban myth that group work didn't work in Coventry because this is what our current our previous provider said, that, you know, you know, as if there was something in the water. That group work doesn't work in Coventry. Actually what it turned out was they couldn't make*

			group work work."
	QUANTIATIVE Evaluations	**Issue identified**	**QUALITATIVE Interview quotations**
	Not identified	Reach	*"because there's a different type of client that actually refers themselves directly than came from the other organisations, 'cause I think, it certainly became clear that the other organisations had a certain reputation of, how to term it politely would be, there isn't a polite term."*
	Not identified	Compatibility & Reach	*Whereas there's a large number of people who have got significant drink problems but don't wouldn't necessarily see themselves as a dirty, homeless client. I can think of a few people, ...who would not have gone to the other services.... They may not've seen them as relevant to them or may prejudice... But they did engage with the day care 'cause they saw it as different.*
Wellbeing Mentors		-PILLAR-	
	Heterogeneity between schools in number of returns and completeness of returns	Compatibility & Setting	*"Erm. Yes...., schools are very autonomous, err, and and and that's often very difficult for partners who aren't in education to understand. Err, you can't tell them what to do. So, err, there there was variation. Erm, and that was often down to individual school systems, school managers, etc.*
		Intervention adaptation	*"...Erm, so even within the wellbeing mentors there was a variation in how those personnel in school were were actually utilised."*
	Partial data collected on academic achievement and was different for each school	Setting Variation	*"Because schools are very individual organisations how they operate, and the systems they use, are very different from school to school."*
	Not identified	Setting Variation	*"So for example, if they were a primary school they may not've even considered the issues around sexual health and teenage pregnancy for their pupils."*
	Didn't follow flow chart of exclusion criteria	Compliance	Not identified
	Not identified	Awareness &	*"Err, you know, educationalists don't necessarily look at heath related*

		unintended effect	*data.* *....And to actually give them a steer on that they they they found very, err, very enlightening I think. And very surprised in, erm, some occasions."*
	QUANTIATIVE Evaluations	**Issue identified**	**QUALITATIVE Interview quotations**
	Session attendance record not maintained in full	Design & timing	Towards the end of the project, it was suggested that mentors looking for new jobs may have affected response from mentors
	School term times affected follow ups	Timing	Not identified
	Evaluation timing: The intervention commenced after the Mentors project had become established.	Timing, risk of low buy-in	Not identified
	Regular training for eight schools (together)	Sustainability (of ethos)	*"Erm, so we'd sort of done the groundwork, if you like. You know, we we'd, sort of, done, erm, you know, we knew where we wanted to go, because we knew what the next development wo- was would likely to be to be"*
	Collection and sampling bias may have been affected by referral system (and variation between schools)	Beliefs about roles (role of schools)	*"some people might be feeling that it's not a school's place to dabble in mental health and wellbeing. They might say that they, erm, haven't got the expertise, they shouldn't be shown. They may be frightened of what may come out and handle it."*
			"Where the doctor, the GP, seems to be able to say right, that hasn't worked and will go to stage two much quicker than the school will go. So, therefore, it's not particularly in the interest of the school to invest the time trying to help more on that universal small group approach because going straight to the doctor gets you straight onto the next stage."

	QUANTIATIVE Evaluations	**Issue identified**	**QUALITATIVE Interview quotations**
	Intervention fidelity	Approaches of leadership Beliefs about roles (role of mentors)	*"The mentors themselves didn't have the authority. They are seen as a so- kind of a auxiliary support staff. So in terms of the pecking order, the hierarchical place of them in the schools, whether they were talking about certain things, I don't know if teachers were receptive to what they were saying. Erm, they needed the support of a line manager. Err, a senior teacher who would actually back it up."*
			Interviewer:? "Do you think the the relationship has changed at all, between the teachers and the…" *Interviewee "I think in I think in certain schools it will've done, but in other other areas it can still be a dividing line."*
	Fidelity Variation in schools	Beliefs about effectiveness	*the clearer the vision that the senior teachers had, and especially the head teachers in many cases, had of what the wellbeing mentor was meant to do, the more effective the wellbeing mentors were.*
Physical Activity		-PILLAR-	
	Data collection: loss to follow up, miss-coded data resulted in increase in invalid data	Skills	*" got a lot of good data, but I don't do statistics..."*
		Capacity	*"We're not research programme. We're a delivery a programme."* *"But it's that's really tough 'cause we're geared up for delivery."*
	Data collection: Questionnaires were changed part way through	Continuity & Evaluation skills	"*And it was a lot effort a lot of effort to add it in to the questionnaires, to get it out, to change the database to add it in, for nonsensical data. So the evaluation and monitoring I've really not been happy with. 'Cause*

	evaluation, resulted in loss of comparable or valid data FAAF and OBOL		*that came a year and a half into the project. So we were already collecting data."*
	QUANTIATIVE Evaluations	**Issue identified**	**QUALITATIVE Interview quotations**
	Data collection: validity of self-report measures	Practical tools Resources	*"Cause, erm, it's great to have the pedometers that really accurately measure activity levels. But on a on a programme where we don't have that much money... we can't afford spend two hundred per pedometer thing."*
	Not identified	Reach	*"... [X] University evaluated our programme and the aim of that was to get some tools that these kinds of programmes could use, but the stuff was really academic... The people we work with, literacy levels are really low, they're not gonna understand some of the stuff, so it was completely useless."*
	External data collation consultant didn't compute variables correctly	Reporting	Not identified
	Not identified	Communication	*"And we had to add that in. No one asked us whether we wanted it. We were just told it had to go in. And I don't think it gives any valuable information as well."*

8.3.1 Alcohol

Several interacting issues were identified. Integrating the findings from different methods of data collection allowed for the context in which challenges and barriers played out to be understood, and shed light on several unobserved factors which influenced project outcomes as a result of CHIP. There were several implementation issues identified, viewing evaluation as one component of overall project implementation. The main implementation issues were evaluation fidelity, compatibility, and capacity.

Evaluation fidelity was initially identified as a key quantitative barrier of the alcohol project. From the qualitative data, I identified some of the potential reasons for this lack of fidelity: compatibility and capacity.

Compatibility was an issue in two ways. First, there was a lack of compatibility based on differing beliefs and approaches amongst those involved in the service to delivering ‘effective’ alcohol treatment services. Qualitative interview findings showed that one of the Alcohol project service providers was a long established provider, and, over time, had developed a reputation as a service for ‘dirty homeless people’ (P8). It was later revealed that service users accessing the ‘new’ service, preferred it to the old service because they didn’t feel the old service was for people ‘like them’ (feeling that they did not fit the older service stereotype). The second issue of compatibility concerned ‘reach’; related to potential clients’ reported perceptions about what type of person used the alcohol service in Coventry; because they didn’t see themselves as ‘that type of drinker’, they didn’t access that provider. By providing a ‘new’ provider (through CHIP funds), different types of potential clients accessed the new service. It is possible these clients accessed the service because it held no historical reputation, and therefore did not create a barrier for those potential clients.

Capacity was an issue affecting evaluation and intervention implementation which may have enabled a tipping point – '*Every day was just, you're just pulling you hair out'.* Staff were dissatisfied with aspects of their role, the management of their contract, and the external requirements of evaluation. The lack of feedback or ability to change the evaluation protocol suggested that staff lacked power or confidence to feed back adaptation suggestions to evaluators.

The conceptual pathway below does not address all the issues identified in the Pillar matrix, but illustrates possible mechanisms behind the initial evaluation issue identified from the quantitative data, and revealed by the qualitative findings to be more complex.

Figure 21: Conceptual pathway for Alcohol projects

Implementation

The quantitative fidelity issues identified in the Pillar matrix, viewed in context, show an implementation atmosphere under pressure. Central to this pressure was staff capacity and, later, the loss of funding to provide services. The perception that there was too much work, and not enough time to give clients an optimal service exacerbated poor evaluation planning and unidirectional communication. This may have created a 'tipping point' whereby staff neglected evaluation duties consciously, but it is also likely that the overwhelming nature of their duties combined with some antagonism between providers and the impending transfer of clients due to a lost contract, meant that staff misplaced client files (in which the evaluations were

located). Further, the qualitative data findings suggest that had feedback and evaluation communication been more developed, staff members may have felt more able to communicate these issues to either one of the evaluators or their line managers.

The challenges of evaluation also point to an impact on intervention implementation. The interviews revealed that referrals to other agencies were often mediated by staff beliefs and treatment approaches. A reluctance of some staff to make referrals to agencies using different approaches to treatment (e.g. CBT or TSF) resulted in a small number of staff from one agency referring the majority of clients transferred to another agency. In this way, staff beliefs about treatment influenced client referral rates and had a direct impact on the implementation (and reach) of the intervention.

8.3.2 Wellbeing Mentors

The integration of both types of data on WBM demonstrated that a key evaluation issue was variation, and that this variation may have developed from compatibility-related differences between schools.

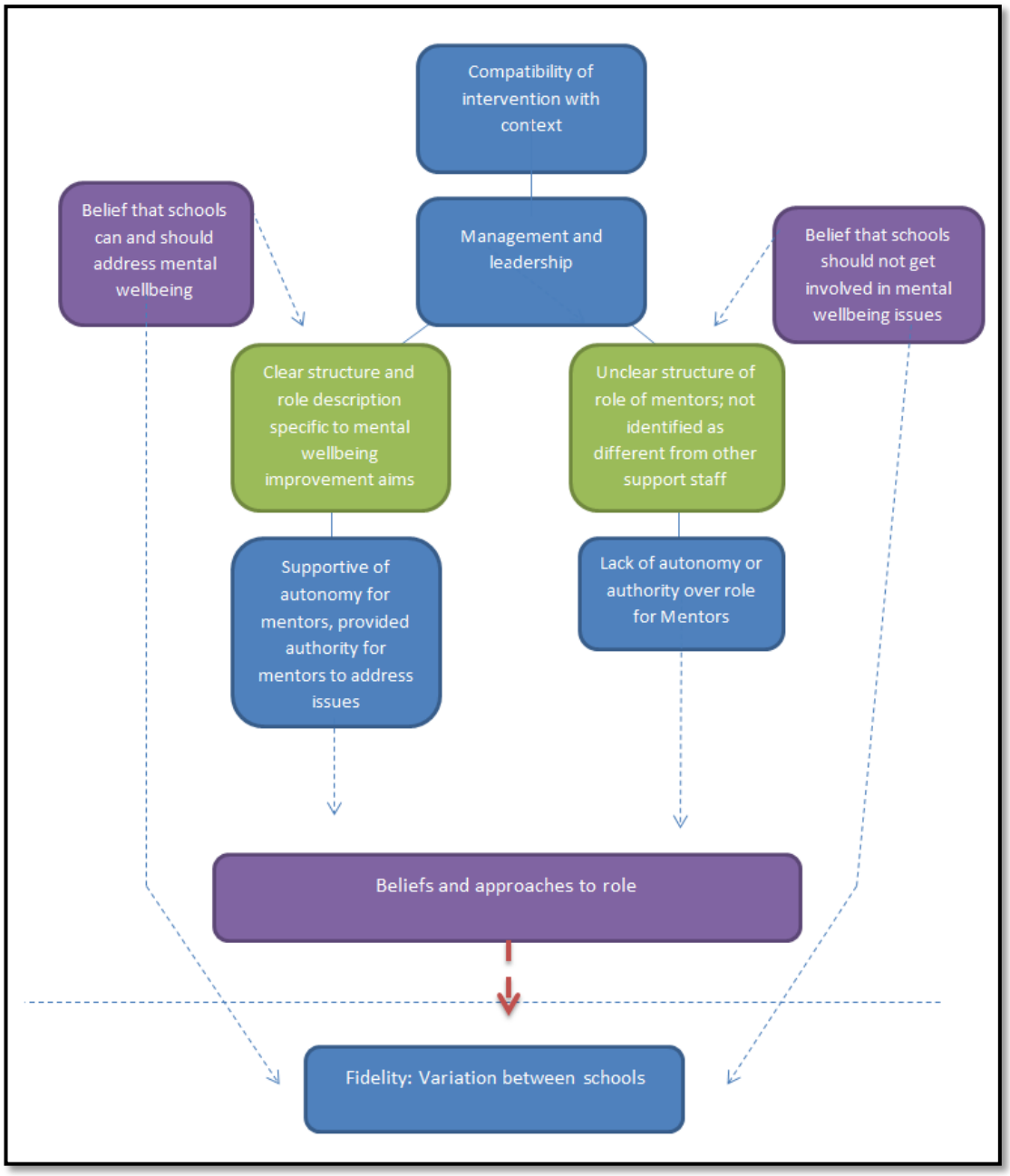
Compatibility issues related to differing beliefs and approaches of staff members within schools, similar to the attitudes towards treatment approaches described in the Alcohol project.

Two different types of beliefs emerged from the interviews. The first belief centred on the idea that it is not within the school remit to address issues relating to the mental health and wellbeing of pupils, and that when these issues were identified, the pupil should be referred to their GP or other medical professional. This was

seen as a good approach because it meant the pupil could receive appropriate attention sooner than if the school took responsibility for addressing the pupil's difficulty. The second belief centred on the view that mental wellbeing could be effectively addressed within the school without the need for external intervention (in most cases), and that this would positively impact on the behaviour and achievement of the pupil. Where the vision of the school leadership reflected the former belief, mentors were seen as less successfully integrated into schools and where the vision of school leadership reflected the latter belief, mentors were seen to have greater flexibility and authority in their role. The WBM project was seen to be more 'effective' and have longer term sustainability in schools where this belief was the more prevalent of the two.

The diagram below demonstrates the over-arching conceptual pathway described above, namely how the beliefs of leadership affected the mentors' role within the school. The 'lack of flexibility and autonomy' of the role of mentors suggests that a hierarchical structure of authority may have limited the remit of the mentors. Ultimately, the integration findings suggest that the beliefs and approaches established within schools may have affected the variation and sustainability of the project. This may have contributed to the variation in the ability of some mentors to deliver evaluation objectives as planned.

Figure 22: Conceptual pathway for WBM project



Implementation

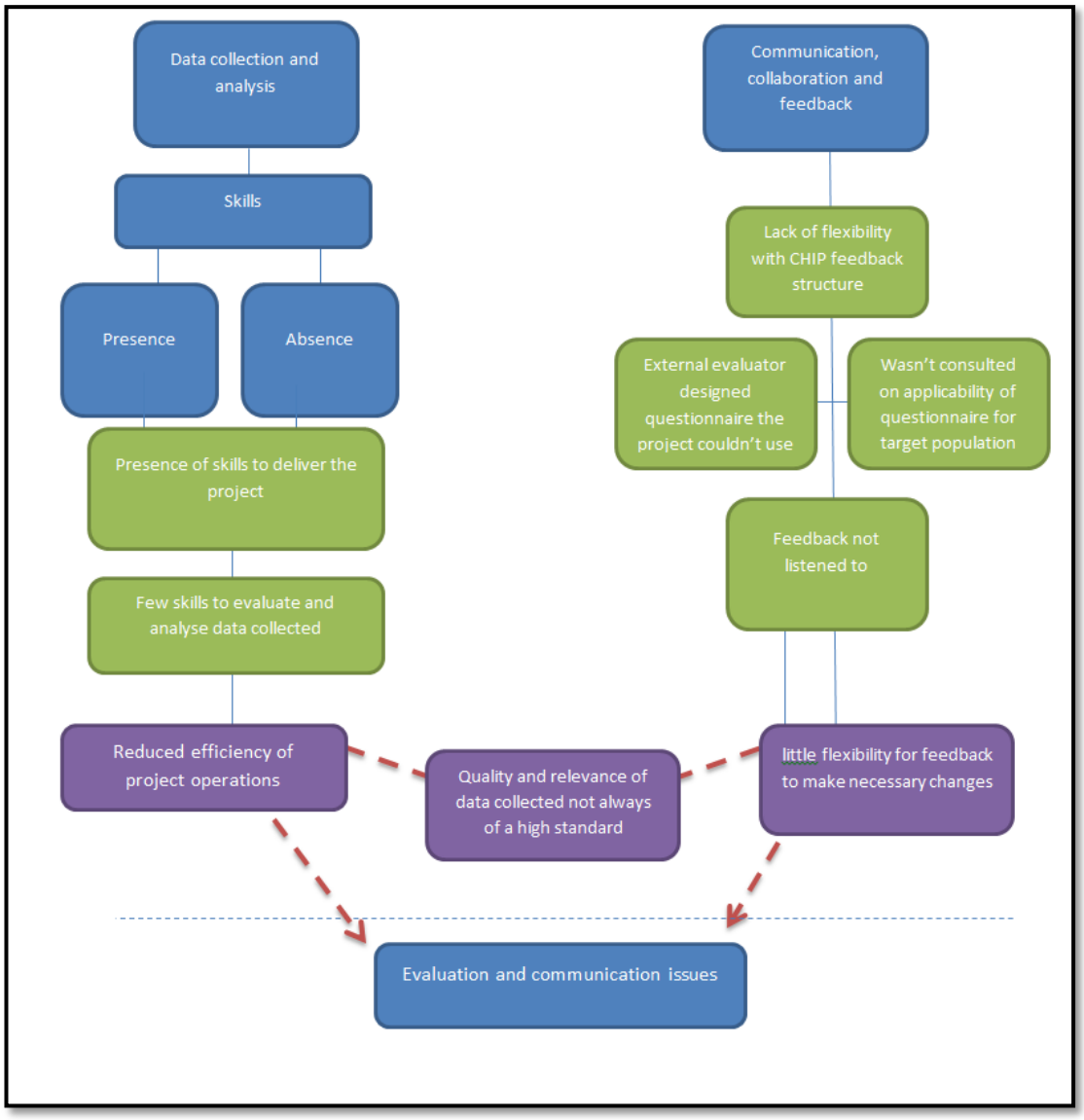
A project implementation challenge in the Wellbeing Mentors project related to others' beliefs about the role Mentors played within each school. These were reported as having an impact on the autonomy and confidence of the mentors.

Mentors that worked in schools where they felt their role was understood and valued demonstrated indications of greater role sustainability and a growing value within the school of supporting good mental wellbeing in young people, and in some cases, staff members. It was also reported that in schools where there was less support and less autonomy for mentors, these roles were made redundant upon the completion of the project.

8.3.3 Physical Activity

The key issues identified by integrating qualitative with quantitative data in the physical activity projects related to data collection, analysis, and communication. The presence and absence of knowledge and skills played a central role in these issues. The *presence* of skills was an evaluation issue because project staff were aware of some data collection problems but did not always feel 'listened to' by their managers, which caused frustration and a perceived decrease in efficiency. The *absence* of knowledge and skills of staff members to analyse and make sense of the data they had collected was a problem. This was not necessarily seen as part of their role because they were 'set up to deliver' causing frustration. In addition they were dealing with barriers of delivery of the OBOL and FAAF interventions. Consequently, trying to develop questionnaires, collect data and follow up clients proved for some a challenge too far, and tipped the balance in terms of the capacity of the team. The figure below reflects some of the issues described in the pillar matrix.

Figure 23: Conceptual pathway for Physical Activity project



An evaluation implementation challenge for OBOL, and to a lesser extent FAAF, was a lack of partnership in 'who' and 'how' decisions were made. The 'useless' tool created by one early external evaluation of OBOL was reported as not reflective of the reading level of most OBOL participants. Later, the inclusion of a 'nonsensical' questionnaire question without consultation of the OBOL team from programme managers was seen to negatively affect the efficiency of the project. Early barriers in FAAF were rectified with a change in management combined with autonomously made changes over the course of the intervention. In both OBOL and FAAF, a lack

of joint decision-making and two-way communication between staff delivering the project, and managers and evaluators making decisions about the appropriateness of evaluation content hindered progress on delivering project objectives.

Implementation

The evaluation barriers seemed to have an impact on the implementation of OBOL and FAAF in relation to staff capacity, where evaluation barriers required greater capacity (e.g. time, energy, resources) and therefore created a deficit in capacity in the team's ability to deliver: "*We're not research programme. We're a delivery a programme".*

8.4 CHAPTER DISCUSSION

QUAN-QUAN

I have provided a context in which to view the mental wellbeing of participants completing health improvement interventions in Coventry alongside larger, representative samples of Coventry as a whole. My findings were consistent with Maheswaran and others (2012). Participant WEMWBS scores were considerably lower than population means, and in some cases well below the interquartile range from the population sample. This may be because participants have identified a particular issue which they wish to address/change in order to improve their health – physically, mentally or socially. These findings may also suggest that participants attend improvement interventions because they recognise a general lack of wellbeing and wish to make changes. Specifically what those changes are or the ways in which they are made might be less important for improving mental wellbeing than the fact that a need has been recognised and addressed.

QUAN-qual

In the integration of quantitative data and qualitative data, the matrix 'pillar' technique helped identify differences in evaluation barriers identified through quantitative means and those identified through qualitative means. This integration revealed that personal, political, intersubjective, and social issues were relevant to evaluation barriers and those barriers did have an impact on aspects of project implementation in this study.

I developed conceptual pathways, and possible common 'roots' to reoccurring evaluation barriers.

In each case, reasons for evaluation barriers were not apparent from their initial identification through quantitative means. The integration of methods allowed for greater insight into the operational system within each context; the integration revealed barriers to evaluation. The identification of these barriers to evaluation also shed light on issues affecting the overall implementation of each project.

This integration identified factors contributing to the lack of evaluation fidelity in the Alcohol project. The integration enabled the distinction between errors such as where to file forms (which can be easily resolved in future interventions), and the more challenging requirement for a shift in the culturally engrained organisational practices and beliefs. Different beliefs and approaches between different Alcohol services providers suggested that sustained internal conflicts require changes in the attitudes of stakeholders towards differing provider cultures and treatment styles. It is likely that these conflicts contributed to lower referral rates, an unequal provision of services to clients, and created possible barriers to evaluation of mental wellbeing in the service.

For the WBM project, an evaluation and implementation issue identified from this integration was variation between schools. This variation may be related to the level of compatibility between the WBM project ethos and the school ethos; where these were aligned, mentors reported a better ability to complete their objectives, and where these were not aligned, mentors encountered implementation challenges.

In the Physical Activity project (mainly OBOL), evaluation barriers were rooted in the presence and absence of skills and a lack of reciprocal communication that meant modifiable changes were not made where perhaps they could have been (e.g. revising questionnaire questions). These barriers may reflect hierarchical distribution of power and lack of confidence to make autonomous changes in the project, reflected in the frustrations felt by staff. It may also have been a more benign incongruence of skills relative to objectives, reflecting poor planning and resource distribution for managing the project. Lack of action taken early on in the project may have reinforced the idea among project stakeholders that changes requested would not be followed up, reflecting a perception that situation-based knowledge and skills would remain 'unheard'.

Evaluation barriers eluded to wider implementation challenges in the Physical Activity project. Unclear and inconsistent communication between stakeholders resulted in multiple changes to components of the intervention itself, adding 'extra' work, taking up time and resources and generally detracting from the overall delivery of the project.

The above findings suggest that lack of reciprocal communication and joint decision making about aspects of evaluation can contribute to poorer evaluation processes and a reduced ability to assess the effectiveness of the interventions themselves. The findings also showed associations between evaluation barriers and

implementation barriers that were not altogether straightforward and that shed light on potential causes of both evaluation and implementation barriers. Interestingly, the evaluation barriers highlighted some implementation issues that were not necessarily related to or caused by the evaluation, but were established on-going challenges (e.g. Alcohol).

8.4.1 Comparison with other studies

I was able to obtain little to no information on studies integrating quantitative and qualitative health improvement intervention findings related to mental wellbeing. I gathered insights on integrating methods and mixed-methods working from O'Cathain, Murphy, & Nicholl, 2007, 2008a; 2008b; 2010; Miles & Huberman (1994; Wendler, 2001).

In terms of findings, Taylor-Robinson and colleagues found similar data collection and management limitations, but did not illustrate potential pathways (2012). However the work of Riley and Hawe offers greater insight into interpersonal intervention dynamics, describing how individual 'stories' operate within each system of practice, which 'reveal the deeper values...guiding the way [public health practitioners] make decisions' and fleshing out how 'the strengths and vulnerabilities of different ways of working' contribute to intervention dynamics (Riley & Hawe, 2009). They illustrate how often personal and professional narratives become intertwined in day to day implementation of projects, and how this is neither a wholly 'good' or 'bad' thing, just a practicality of public health practice.

Pallan, Parry, Adab (2012) also highlight an excellent example of the role of context in communities and how useful 'insider' knowledge can be in the design of interventions. They point out that assumptions about the behaviours of target

participants must be considered in the wider eco-cultural context, or they might result in problems so often seen, such as low recruitment rates, low attendance, and high dropout rates. The authors discuss findings which showed through community based focus groups that providing an after school physical activity intervention could be poorly attended, if a majority of pupils in the school are South Asian and Muslim and attend mosque after school with their families. This ecological and cultural context shifts the entire setting for the intervention, something observed through the integration of findings in this thesis.

8.4.2 Strengths and Limitations

In this chapter I have combined methods building on the methodological techniques described by O'Cathain, Murphy, Nicholl (2010) demonstrated by Wendler (2001) and originally conceptualised for mixing methods by Miles and Huberman (1994).

It is a strength of this chapter that I tried to minimise bias by adapting the integration approach proposed by O'Cathain Murphy, and Nicholl (2010) and developing a pillar integration process, or 'PIP'. The PIP allowed me to move iteratively to contrast, compare, and combine the ideas surrounding evaluation and implementation issues.

A limitation of this chapter is that I cannot fully address all of the complexities identified from each method, or the questions that arose from this analysis. For example, I did not include questions about the household surveys in the qualitative interviews, so I could not integrate quantitative and qualitative survey findings in the PIP, limiting the scope of the integration in this way. Another example is that during the interview process I made the decision not to discuss preliminary mental wellbeing evaluation outcomes with interviewees because of the potential influence

on interviewees' responses. This may also have changed the dynamic of the interview, with my role shifting from that of interviewer to co-evaluator, and risked the interview becoming more about my explanation of the results, rather than the interviewees' thoughts about how their project influenced mental wellbeing. This limited my ability to observe and analyse and discuss interviewees' reactions to their project WEMWBS results.

For the WBM project, a missed opportunity for this chapter may have been the inability to compare between-school differences quantitatively and qualitatively. The small number of participating schools and a lack of interview data examining the extent of change in each school meant I could not integrate the data to this level of specificity.

My insider-outsider role in CHIP may have produced a researcher bias. For example I may have unintentionally introduced other aspects of CHIP into the analysis not previously identified during collection with either method, but which I observed in my time at meetings, viewing reports, or during informal discussions with CHIP stakeholders. There were moments during interviews where it was relevant and appropriate to discuss mutual experiences, or statements I didn't ask interviewees to elaborate on, because I had been present at the referred meeting. In these instances my interpretation of events may have influenced my interpretation of the interviewee's interpretation (also known as a 'double hermeneutic', (Smith & Osborn, 2003)). I took steps to make myself aware of this bias (see Chapter 7 for more detail) and as best as possible, I 'unpacked' my interpretation from what I perceived to be the interviewee's interpretation. Ultimately, it is not possible to remove all researcher bias from qualitative interview analysis, rather it is important to consider the balance of interviewer and interviewee interpretations when representing stakeholder accounts.

CHAPTER SUMMARY

In this chapter I found that mental wellbeing among participants of CHIP interventions was considerably lower than population comparators. I also found that process and implementation issues were rooted in issues not initially identified using quantitative and qualitative methods independently. Initially project-cases shared similar quantitative limitations, mainly surrounding issues of evaluation fidelity. Looking at the issues with a qualitative focus complicated the issues considerably. In two of the three projects I found that differing beliefs and approaches of staff in the Alcohol and Wellbeing Mentor project settings seemed to affect the implementation of the interventions. For the Wellbeing Mentors, this issue may have had an impact on the effectiveness of the intervention itself. In the Alcohol project, staff beliefs and approaches to treatment differed to the point of substantial inter-organisational conflict, while client beliefs about the older service appeared to influence their decision to access treatment services.

Integrating findings from different methods enabled valuable contextualisation of barriers to evaluation and implementation.

CHAPTER 9: DISCUSSION & CONCLUSION

9.0 DISCUSSION AND CONCLUSION

In this chapter I will summarise the overarching themes of my thesis. I will then discuss the implications for policy, practice and future research. Finally I will draw out broad conclusions.

9.1 SUMMARY OF THESIS THEMES

"The complex nature of implementing public health improvement interventions in community based settings is 'emergent, dynamic, non-linear"

(Tremblay, 2011)

In this study, I identified several core themes that run throughout the findings. These themes can be understood by considering the two types of integration that have taken place as I have conducted the study: 1) Empirical integration, of the kind described in chapter 7, and 2) conceptual integration, which is a synthesis of my experiences, having conducted the study.

The empirical data-driven integration in this study reflects specific findings, answering specific questions such as 'what were the main barriers to the implementation of selected CHIP projects?' or 'how do the evaluation findings compare to population-wide levels of mental wellbeing?' This integration provides a wider context in which to locate CHIP.

Empirically, I found that mean WEMWBS scores were significantly lower among intervention groups than among their population counterparts, and that these differences were largest in the older age groups. I also found that limitations related to intervention and evaluation processes were related to differing beliefs and approaches within and between collaborating groups and organisations.

Conceptual integration places the findings from this study in another context, that of the wider system in which CHIP was located – a public health system with major changes looming, programme planners with little to no experience of how to plan a complex, multi-component, multi-staged programme, and attempting to bridge two organisations not wholly independent of one another, yet, as I have shown in this thesis, epistemologically at odds. Values differed, and definitions differed, as well as the meaning of evidence, the importance of outputs, and the differing managerial assumptions. These issues contributed to 'wicked problems' in Coventry (Rittel & Webber, 1973, Ferlie et. al., 2011) especially when assumptions lacked clarification, as Mathers, Taylor and Parry also found (2012). These wicked problems are not new, but they are important concepts to consider in the development and planning of public health improvement interventions.

Below I summarily discuss important discoveries from this thesis.

Mental wellbeing

The introduction of mental wellbeing during CHIP influenced CHIP stakeholders in such a way that it became a catalyst for considering complex health pathways, a way to understand an outcome versus an output. It provided a mental space in which to learn nonlinear, non-medical model concepts of health and wellbeing through practice. Stakeholders had numerous opportunities to develop implicit understandings of mental wellbeing as a concept and as something to be measured. Tsoukas argues that 'tacit knowledge' is something that cannot be reduced or converted into explicit knowledge, that it is something that must be experienced, interpreted and 'made personal' (Tsoukas 2005, Polanyi, 1962). For CHIP stakeholders, this happened slowly and over time. It is unclear whether or not the rhetoric surrounding mental wellbeing paved the way for exploration of the concept by stakeholders, or caused confusion and frustration in instances where

mental wellbeing and other health concepts were rhetorically held in high esteem but not necessarily backed up with clear meaning or definition. Intentionally or not, CHIP may have enabled a more sustainable understanding of mental wellbeing because it meant stakeholders could 'relate to [their] circumstances in new ways and thus [saw] new ways forward' (Tsoukas, 2005, p157).

Planning and practice

There was an incongruence between organisational planning and structure, and operational and implementation practises in CHIP. The former were rigid and compartmentalised and the later were heterogeneous, complex systems. This may have contributed to conflicts and frustrations which limited some operations during CHIP- leaving a conceptual 'gap' or lack of connection between the rhetoric of planning (e.g. high hopes, assumptions about capacity, volume of objectives, resources, time allotted for actions) and the reality of practice (the extent to which plans do not accurately portray practice). This conceptual gap may have been maintained by or developed from the gaps in social practices between managerial groups discussed in Chapter 7. The work of Knorr-Cetina (1999) and Kislov and colleagues (2011) suggest these are 'epistemic communities', or 'communities of practice' and are important elements of complex partnership systems. The gaps between each management structure in CHIP were important in this study because they may have caused some of the conflict and frustration which limited some operations during CHIP. However I found that mental wellbeing (conceptually) and WEMWBS (mechanistically) helped bridge some of those gaps during CHIP.

Social phenomenology

In Alfred Schutz's theory of social phenomenology, he discusses 'the system of relevances' and the 'stock of knowledge at hand' operating within and between individuals as they go about their daily lives (see Appendix 4 for a description of

these concepts) (Schutz 1964, Rogers, 2003). I have observed these concepts during this study, with the difference that concepts occur at both the organisational and programme levels. By conceptually and empirically defining different types of qualitative and quantitative data I have identified that 'the stock of knowledge at hand' operates within the system including the settings, the history and the political situation at a given point in time. The stock of knowledge at hand is the available knowledge, evidence, skills and experience stakeholders possess in order to perform their roles and implement their duties.

Mental wellbeing was slowly over time integrated into both the system of relevances and the stock of knowledge at hand. It was integrated into the system of relevances first, through the political system by becoming a national outcome measure, and was first integrated into the CHIP system through the annual household survey. Mental Wellbeing was talked about; health and wellbeing boards were established, and the 'drip drip' effect described by one interviewee from this study occurred at a system-wide level in this way. Second, mental wellbeing became part of the stock of knowledge at hand. It was addressed in a specific project, with a project manager who, in a way, had an evangelical approach to educating CHIP stakeholders about the importance of understanding mental wellbeing at a personal and professional level. It was evaluated in several projects and mental wellbeing outcomes were measured. They were examined and explained. The reinforced exposure of CHIP stakeholders to mental wellbeing meant that a disparate group of evidences and experiences could be viewed as a piece of a mosaic drawn together over time, that didn't make sense in the beginning, but did make sense in the 'end'. Stakeholders had the opportunity to learn about the concept as a theory, but they also had the opportunity to experience mental wellbeing as an outcome and see the results through empirical findings from this thesis.

In this way, mental wellbeing became ‘stock knowledge’ and, in public health improvement, is an important conceptual leap if public health is to continue to improve its ability to deliver and understand complex projects in complex settings. In this thesis I have demonstrated the mental wellbeing acted as a catalyst for this conceptual leap.

Original contributions

This thesis has facilitated a number of original contributions.

This is one of the first studies I am aware of that brings together mean WEMWBS scores from health improvement interventions collected within the same period of time within the same city in England.

I found evidence that deprivation is not linearly related to mental wellbeing.

I have identified preliminary evidence that the relationship between physical activity and mental wellbeing could be moderated by fruit and vegetable consumption.

The inclusion of mental wellbeing as an outcome in CHIP may have helped stakeholders harmonise health services and outcomes in a way that hasn’t been done before.

The introduction of mental wellbeing into a programme of work unified organisation-wide learning and development AND the understanding of health outcomes.

I am unaware of any similar adaptation of the mixed methods matrix technique I used in this study. I adapted the technique to minimise the observer bias and maximise the integration of concepts in the integration of my findings. I have called this the Pillar Integration Process (PIP). The PIP is equal parts framework and process to facilitate the synthesis of mixed method findings.

This thesis has made a contribution to knowledge of public health improvement interventions as they are practised in the 'real-world'. I have experienced the challenges faced in planning and designing complex programmes of work and the successes and failures of trying to evaluate the projects within a programme. I provide evidence that improving health outcomes in populations requires the consideration of the public health system implementing the programme, as well as how the stakeholders value and interact within that system.

9.6 THESIS STRENGTHS AND LIMITATIONS

Throughout this thesis, I have addressed the strengths and limitations of each respective chapter's findings. Here, I address the strengths and limitations for this thesis overall.

It is a strength of this study that I used a mixed-methods design. This design enabled me to collect qualitative and quantitative data and integrate it using a novel approach. Both the quantitative and qualitative data collection and analyses were limited in certain ways.

Quantitatively, the cross-sectional data collection was limited by design, in that no sequential cause and effect relationship can be discerned between mental wellbeing and the independent variables assessed. A longitudinal design with repeated measures would have enabled me to examine potential cause and effect relationships at the population level, and this is something to consider to determine this type of relationship in the future. The cross-sectional collections were limited by low response rates, and commissioning regulations that resulted in year on year changes to the survey methods and questionnaire content inclusion/exclusion. The most pressing limitation of the quantitative data collection was the selection bias within the sample, particularly because of the low response rate. It is likely that non-

responders are different from those who responded to the survey. For example, people who are well may be more likely to respond to the survey and more likely to respond to WEMWBS, which could skew the results and reflect higher scores than may actually be present in the population.

Although the sample is representative of Coventry on the basis of socio-demographic variables (age, gender, ethnicity, education, employment), the variables in focus cannot be compared with another sample, so respondents may be the same gender, age, and socio-demographic status but they may differ significantly from the population of Coventry based on mental wellbeing levels, physical activity, or fruit and vegetable consumption, on which we have little other comparable survey data from which to discern differences between samples.

It is also possible that there is an interviewer bias. Interviewers are instructed to use the 'random walk' technique, but they may have a tendency (intentional or unintentional) to select some houses or flats over others (e.g. safe, accessible) and this could have an adverse effect on the nature of the sample.

Yet the cross-sectional design allows a large population to be observed at one point in time for a *relatively* representative sample of residents. The surveys can be conducted relatively cheaply and can continue, if surveyed on a regular basis, to provide information and insight into a wide range of behaviours, possibly identifying long term patterns related to mental wellbeing and health amongst the population overall, that can be targeted for testing with more robust methods.

The before and after evaluations were limited in that they lacked comparison samples, and I therefore cannot determine whether or not a change in mental wellbeing was due to the CHIP intervention implemented or another factor that

occurred during the same period of time, though I did adjust for regression to the mean. Selection bias is also a limitation of the evaluation samples. These were purposive samples, not representative of the population of Coventry. The intervention participants were motivated to attend the interventions likely to be for a number of various reasons. Intervention and evaluation 'completers' may also have differed from those who attended the baseline session, but did not complete the intervention resulting in a differential loss to follow up. While I can determine the WEMWBS scores of those participants who attended and completed, I do not know the extent to which they differ from those who attended and did not complete, or those who never attended at all and who improved their mental wellbeing without being exposed to the intervention.

The focus of these evaluations was largely pragmatic, designed to maximise the likelihood of evaluation participation and fidelity. The addition of control samples would have complicated the evaluations considerably; there were ethical concerns for the selection and involvement of participants and the skills and capacity of intervention staff might have created barriers for the completion of the evaluation.

The heterogeneity between questionnaires in each intervention was a limitation. Each intervention developed a questionnaire independently of other projects and of the mental wellbeing evaluation. This meant different questions were used to answer similar questions, such as physical activity frequency or portions of fruit and vegetable consumption. Future evaluations could use a standardised set of basic healthy lifestyle questions to enable comparisons to be made.

If I were to repeat these evaluations, I would invest more time in piloting the evaluation and familiarising staff with the evaluation procedures including process evaluation collection. I would work with intervention staff as frequently as possible,

to improve reporting and data collection- either through monitoring progress on a more regular basis, or facilitating informal discussions where staff were able to voice concerns about intervention and evaluation implementation. While I always provided open discussion opportunities via email, it is my feeling that face to face conversation would have been more influential and I could have increased my knowledge of interpersonal dynamics. If I had been more involved with staff from each evaluation, it is possible that the issues identified in the integration chapter may have come to light sooner and I may have been able to address some of these issues and avoid some barriers.

The strengths of my qualitative research include the rigour of my methods. I aimed to ensure that a range of views were represented in the findings, and perhaps more importantly, considered in the analysis. I took this range of views as a marker for an acceptable degree of transparency and honesty among the interviewees. I remained in contact with all but one interviewee and checked that interviewees found the findings acceptable and true to their thoughts and feelings about their experiences. I closely followed Creswell's (2009) criteria to ensure the reliability and validity of my methods and analysis. I also used a particular technique (OSOP) to add another level of rigour and transparency in the analysis of my qualitative finings (Ziebland and McPherson, 2006).

There are some limitations to the qualitative component of my study. I did not interview CHIP intervention participants. This could have provided another level to the integration of CHIP, and enabled a comparison of participant's views of their intervention with the findings from the evaluations. the logistics and time it would have taken to undertake this aspect of work may have been beyond the scope of this study, and would have deviated from the focus on the practicalities of conducting the interventions and evaluations. The sample size is also relatively

small. However I interviewed the participants that had knowledge and experiences related to CHIP interventions evaluating mental wellbeing and I covered a range of managerial positions providing a well-rounded, purposive sample. If I were to conduct my qualitative research again, I might conduct multiple interviews over a period of time throughout CHIP, to establish changes over time in the views and opinions of stakeholders, as opposed to the retrospective nature of the present design. I might also consider conducting an interpretive phenomenological analysis, because this would provide greater insight into individual experiences. I would also consider developing an interview guide with less structure as interviewees often raised issues in the guide, before the questions were asked. In some cases this created a somewhat repetitive interview, but, on the other hand, this raised new iterations that the interviewee hadn't addressed when they initially talked about experiences.

The integration of quantitative and qualitative findings is a strength of this study. I adapted a mixed method matrix and developed a technique to analyse the findings. By integrating these findings, I achieved greater insight into conceptual pathways of the process and implementation actions in CHIP interventions. Integration allowed me to identify more closely implementation and process issues which were more complex than originally identified. The integration findings demonstrated that limitations identified from the before and after evaluations, had they been identified earlier, still may not have be easily rectified (or at all).

It is a limitation of the integration that I have not fully addressed all of the complexities identified from quantitative and qualitative findings. Another limitation is the potential for researcher bias. I may have unintentionally introduced other aspects of CHIP into the analysis not previously identified during collection with either method, but which I observed in my time at meetings, viewing reports, or

during informal discussions with CHIP stakeholders. This could have affected the findings and influenced my conclusions and I may not have been aware of the bias. However, I tried to minimise this risk through my adaptation of the matrix described by O'Cathain Murphy, and Nicholl (2010), and in doing so, I developed the pillar integration process (PIP).

Throughout this thesis I have considered the strengths and the limitations of each my methods and analytical techniques. I have realised that although there are other ways to answer the research questions I have asked, I have sufficiently justified the reasons for using the particular methods I have, and I have reflected on the lessons I have learned from the limitations of my research.

9.6.1 Reflexivity

In this thesis it is important that I consider my role as a researcher, an evaluator and a colleague during my involvement with CHIP.

I had an 'insider-outsider' role that I think may have an important role to play for public health researchers conducting qualitative evaluations. It is important to be aware of the delicacy, advantages and the limitations of this role as a component of the system and to recognise it.

In order to account for this I created 'reflexive codes' during coding. I have not yet analysed the results from these codes, though I used them as a form of constant awareness of my dual role during analysis. I plan to study my relationship with interviewees in terms of my 'insider-outsider' role in greater depth, using these codes and drawing on public health practice narratives (Riley and Hawe, 2009) and social phenomenology (Schutz, 1964,1967) and other relevant theory. I plan to undertake further analysis examining this role and my position within the CHIP

system. This may also provide greater insight into what impact the role of the evaluator may have for public health improvement evaluations.

My collaborative role in the collection of household survey data (and also CHIP overall) provided me with an 'insider' perspective of the challenge of partnership working, particularly regarding approaches and styles of work. For example, it took me some time to adapt to receiving unexpected phone calls as opposed to pre-arranged ones or emails (allowing me preparation time). It took time to adjust to the different 'timelines' partnership staff worked on. I also found I had competing interests with some Coventry Partnership staff, whose work involved longer-term relationships and a wider range of rationale to draw on when it came to making decisions about who would collect household survey data (and why), the rules of engagement, what questions would be asked, and why (these were sometimes political, and equally important to my scientific aims). The challenges I faced on this personal-professional level were also observed in the findings of my thesis, and extend my insight into cross-organisational working and the potential for achievement in public health. I think there is much to learn about the most fruitful ways for developing academic-practice partnerships to flourish in the future on the basis of my findings here.

Through representing interviewee's views with their experience and interpretation of 'doing' public health, I enabled a more natural way of examining the phenomenon of CHIP because knowledge (from my epistemological viewpoint) is co-produced, exposed, criticised, politically aligned and re-aligned, and is shaped over time. My interpretations of stakeholders' public health interpretations are not separate from their practical or phenomenological ones- they exist in the same 'space', because of their having shaped one another. Alfred Schutz (1967) describes this notion as

intersubjectivity, and I think almost above all, this concept is present throughout the analysis and findings in the thesis.

9.6.1.2 Reflexivity on use of WEMWBS

In this section I include a reflexive consideration of my decision to use WEMWBS to measure mental wellbeing. One of my supervisors created WEMWBS and I myself worked at Warwick pre and post thesis and I already knew how to use and analyse WEMWBS. Because of my familiarity with WEMWBS it was important that the decision to use it was a considered academic decision.

I undertook a rigorous background review of measures of mental wellbeing (see chapter). As a result of this, there were four reasons for my choice to use WEMWBS. These were acceptability, sound psychometric properties, theory-based scale design, and continuity and compatibility across projects and collection methods.

Acceptability: In 2008 and 2009 I was a research assistant on a study validating WEMWBS for use in young people (12-16 years). During fieldwork (administering and collecting questionnaires from pupils) I found that readability could be an issue with WEMWBS and other scales. I compared WEMWBS with other similar scales in the literature and in practice at this time:

- General Health Questionnaire – 12 (GHQ12) (ref),
- Strengths and Difficulties Questionnaire (SDQ) (Goodman et. al., 1998, Goodman, 2001)
- World Health Organisation Wellbeing Index - 5 (WHO5) (Bech, 1998)
- Mental Health Continuum Short Form (MHC-SF) (Keyes, 2002)

- Kidscreen-27 (Ravens-Sieberer et. al., 2007)

I examined readability of the above scales in comparison with WEMWBS using the Fog Index (Gunning, 1969) and found that WEMWBS had a better readability level appropriate for young study participants than comparator scales (e.g. MHC-SF, WHO-5 and SDQ all had lower levels of readability than WEMWBS). The second aspect of acceptability of a scale I considered was for the person entering the data. I double data entered 1,650 questionnaire packs. I became acutely aware of what worked well and what did not for participants completing the scale (e.g. scales with small undifferentiated boxes meant a greater number of missing items) and for those reading and inputting the scale item values (increased data inputting errors). Among the scales I administered and data-entered, WEMWBS was among the easiest and fastest to enter.

In my study, I came across this issue of readability and acceptability again in two different interventions. First, in the OBOL intervention, participants were recruited from areas with higher deprivation and lower levels of education. It was important therefore to use scales in the evaluation of OBOL which had a lower 'Fog Index' score to maximise completion by participants. Moreover, I would later find out that an earlier evaluation conducted (by an external evaluator) with a past sample of OBOL participants was found to be unacceptable due to its lack of readability ("too academic" "it was useless"). Second, during the Wellbeing Mentor evaluation development, I was told by the Mentors themselves that WEMWBS was better than the scales that the Mentors were currently using, because it was easier to read and understand, and because of its positive focus (They were using the Strengths and Difficulties Questionnaire (Goodman et. al., 1998, Goodman, 2001).

Psychometric soundness: I found key competitor scales were not as robustly validated as WEMWBS. For example, the MHC-Short Form for adults and young people had not been formally tested to be psychometrically sound in young person populations at the time (Keyes, 2002). Another potential scale was Ryff's psychological scales of wellbeing (RPSW) which identified six theoretical dimensions of psychological wellbeing (Ryff & Keyes, 1995). However the construct validity of this measure has been called into question (Kafka & Kozma, 2002, Springer & Hauser, 2006), is prohibitively long (60+ questions) and I chose not to use either scale for these reasons.

Theory-based scale design: The design of WEMWBS was specifically developed for use in health promotion contexts. The development of WEMWBS was based on two main needs: First that existing scales (focusing at least in part on poor mental health) showed 'ceiling effects' at population levels. Ceiling effects denote a distinct upper limit in distribution of scores and attenuate the ability of the scale to reflect the distribution within that population (Lewis-Beck, Bryman, Liao, 2004). Second, mental health promotion practitioners required measurement tools to evaluate their programmes, the ethos of which could be undermined by the use of negative measures of mental ill-health (Tennant et. al., 2007). The combination of the rationale for WEMWBS in the literature was echoed in the feedback from public health practitioners as above.

Continuity and compatibility: The opportunity to use a scale in three annual cross-sectional surveys, and also use it to measure change over time, meant that I was able to identify inconsistencies in baseline levels of mental wellbeing from the intervention samples. I was able to have confidence in the use of WEMWBS because of the validity and reliability of the scale tested in both these contexts (Tennant et al 2007, Clarke et al, 2011, Maheswaran, 2012). This enabled

continuity with pre-CHIP mental wellbeing data (The Coventry Household Survey 2010 was written prior to CHIP and used WEMWBS) and compatibility across projects with different target populations, different methods of collection and different objectives but all with the primary aim of improving the wellbeing of the people of Coventry.

For all these reasons, I made the decision to use WEMWBS as it was the most appropriate scale to measure mental wellbeing in Coventry when compared to other wellbeing scales.

9.7 IMPLICATIONS FOR POLICY

There have been significant changes in the understanding and measurement of mental wellbeing in the past five years in the UK. Many of these changes were represented in CHIP, reflected the changing international perspectives on well-being, national political agendas, and major changes to the health service. Because these changes happened concurrently with the development of CHIP, the programme commenced with little experience in planning interventions with mental wellbeing 'in mind' and little practice-based evidence from which to build the CHIP approach.

Mental wellbeing remains a national public health indicator and WEMWBS is still recommended as a measure.

This thesis supports current strategies to promote the health and wellbeing of individuals and populations using a variety of strategies. I have provided evidence that mental wellbeing is closely related to other behaviours considered to be healthy and may share even closer relationships than initially expected, regarding physical

activity, and also fruit and vegetable consumption and mental wellbeing, particularly among women.

9.8 IMPLICATIONS FOR PRACTICE

There are two main types of implications for practice that come from this thesis: Implications for improvement interventions practises and implications for evaluation practises.

The stakeholders practising public health in Coventry had clear, dedicated intentions to improve the health of the public.

Future practice in Coventry and elsewhere might benefit from where possible, a longer time period for planning programmes of work. This was a factor associated with several problematic issues throughout the course of CHIP. This time could include extended consultation with project and programme stakeholders, and extended searches for evidence of efficacy and effectiveness in health improvement interventions. This may have aided the development of clearer aims and objectives from which CHIP stakeholders could base their projects.

Future practice should acknowledge the difference between certain types of public health interventions and the stage of development interventions are at, and that this has an effect on implementation outputs and intervention outcomes. Similarly, the complexity of health improvement interventions and the systems in which they are located was an important factor in the implementation of CHIP projects. The characterisation of public health improvement projects as simple, complicated or complex interventions might allow for stakeholders to plan and design their programmes accordingly.

The practice of public health improvement requires some degree of 'self-knowledge' (a realistic understanding of the organisational aims, vision and values) and critical reflection in the planning and designing phases of programmes. This self-knowledge and reflection might aid more iterative, adaptive processes in project and programme implementation when 'things don't go according to plan' so that multiple levels of management co-produce this knowledge, understand the difficulties and can learn from the mistakes. For CHIP, self-knowledge would have been difficult at its commencement, given the different organisational cultures, the short planning timescale and organisational upheaval.

Technical implications for practice from this thesis are:

- Between-group practices and communication is important for good public health improvement practice and partnership.
- Harmonising questionnaire questions across programme projects, offering questionnaire development support for practice and evaluation, and refining/piloting interventions and evaluations with target audiences to help avoid evaluation limitations, frustration among staff, and confusion among participants.
- Mental wellbeing is a valuable outcome measure because it can have a catalysing effect on stakeholders understanding of overall health and public health outcomes.
- A given public health system might be more efficient if it becomes more self-referential between groups rather than within groups.
- Those operating the system might benefit from reflecting on the system and the role it plays rather than just the components, at each stage of implementation. Otherwise 'silo-based' working will continue to flourish, and it does not appear that this is a desirable option for most stakeholders.

9.9 IMPLICATIONS FOR RESEARCH

Research into the moderating and mediating effects of socio-demographic variables is needed to further explore the pathways leading to poor and good mental wellbeing and health outcomes. The associations found in this study have identified relationships between social determinants of health such as home satisfaction, crime and safety, health and lifestyle behaviours and education and employment, not all of which were expected. In the context of this thesis, these findings provide insight into the factors associated with mental wellbeing in the population.

Further research into the relationship between deprivation and mental wellbeing is warranted.

The effect observed for mental wellbeing in the intervention evaluations differed from the effect seen in the 'primary outcome' in some cases in this study. Replicating this finding might confirm if and to what extent mental wellbeing improvement is sustained for longer periods of time than physical/behavioural changes. The finding that fruit and vegetable consumption moderates the relationship between physical activity and mental wellbeing in multi-component interventions requires replication, and further investigation into the role of gender.

The qualitative findings have led me to question what types of planning strategies make for more 'successful' programme implementation (and better quality health outcomes) than the more rigid planning strategies observed at points in this study. My findings would suggest that this is likely, but it is unclear whether the benefits of different planning strategies would outweigh the negatives.

I have identified here that despite the best intentions and exceptional effort to create a partnered, innovative public health improvement programme, there is much yet to be learned in terms of the best ways to approach, design, implement, evaluate and educate public health workforces in England.

9.10 CONCLUSION

The final research question I answer in this thesis is '*What conclusions can be drawn from the findings for Coventry and for the implementation, evaluation and practice of 'real world' public health improvement interventions and programmes?'*

Theory suggests that those attempting to implement Public Health programmes should consider aspects of public health impact beyond reach and efficacy, such as setting, adoption, sustainability and complex organisational mechanisms when planning a programme. In this thesis I found that population levels of frequent moderate physical activity, high fruit and vegetable consumption and good sleep quality were associated with higher mental wellbeing and that there was a clear health need amongst those living in Coventry for health and wellbeing improvement interventions.

Through conducting interviews I found that the introduction of mental wellbeing as an outcome measure created a momentum of change for understanding complex health interventions and outcomes among stakeholders and assisted those delivering the CHIP programme to better understand the underlying health improvement rationale for their programme. I found clear health benefits from the projects but also highlighted a lack of congruence between the documented linear, unidirectional and unrealistic operational planning which I found in CHIP at a

programme level, compared to implementation on the ground, which was nonlinear, complex and dynamic. The difference between the plans and the observed implementation practices resulted in some of the projects struggling to cope with the evolving and changing needs of the programme (For example moving from outputs to outcomes, introducing mental wellbeing and changing concepts of health, and the work required to achieve partnership with the local authority). The effect on programme level outcomes and outcome measurement was a reduction in the number and quality of valid evaluation returns from some of the projects in the programme and reduced staff capacity to deliver project objectives. Integrating the quantitative and qualitative findings highlighted process evaluation 'misnomers' and identified the complex and interrelated factors associated with implementation barriers in 'real world' practice.

In the thesis I recommend that in the future those planning Public Health improvement programmes and their evaluation should consider how their programme planning strategy reflects the complexity of their organisation's practises and the expertise of their implementation staff. For programmes planning to measure new concepts such as mental wellbeing, acknowledging different and emerging levels of conceptual understanding, and providing flexibility for iterative, transitional stages of programme development (such as conflict and confusion) could benefit implementation. Further research in this area should explore the extent to which complex, collective, and conceptually adaptive operational planning actually results in more successful Public Health improvement programmes.

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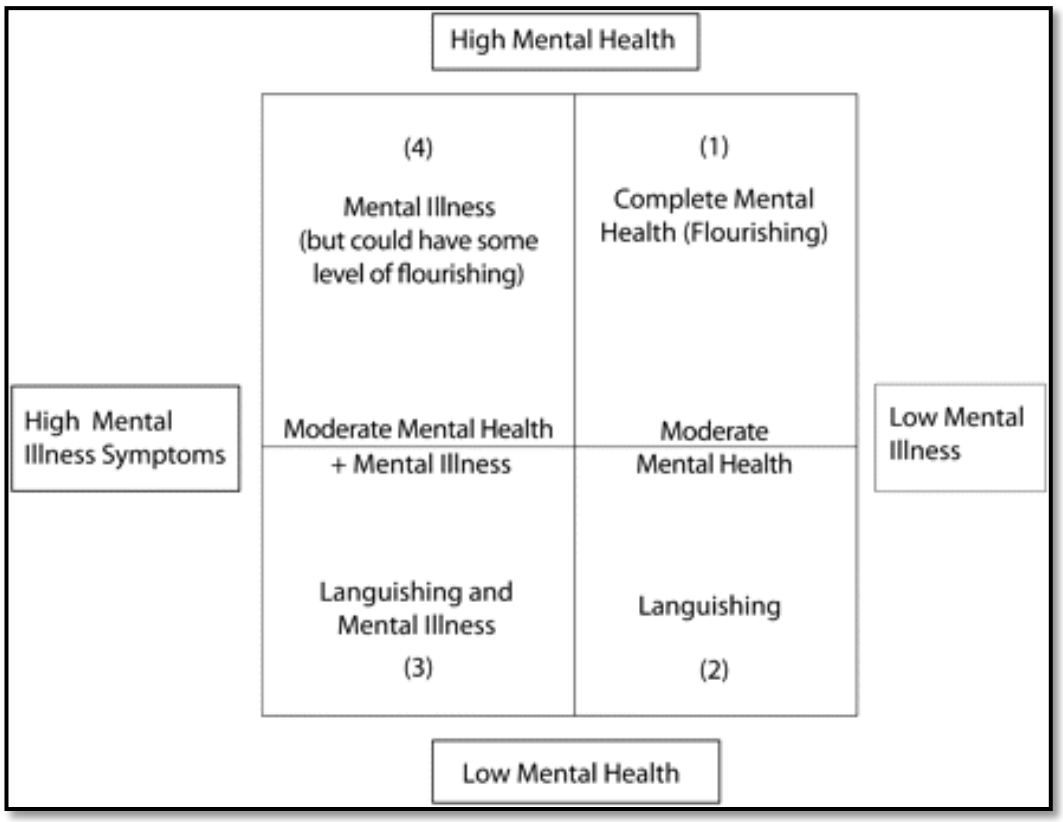
APPENDICES

APPENDIX 2

HEALTHY WEIGHT	Intervention description	Before and after questionnaire	Collection Requirements	Contact	email	UPDATE Notes 20/05/11
Cook and eat well	Cooking/healthy eating course (how many weeks long, how frequently?) Exp Numbers: 1000+	WEMWBS can be incorporated into this questionnaire which also includes nutritional questions. It will be given at the start of the course and at the end of the course, and a 6 week follow up- this can be done in a sample as capacity is an issue.	Instructions, procedure for collection- template for WEMWBS data collection Wants Excel spreadsheet ready for input.	Catherine	Need contact details	Wants to only record the WEMWBS score, shorter will be better for this collection Capacity for data entry expressed a potential issue.
Physical activity/PASSION	Various physical activity interventions	Already collecting data on physical activity and etc; keen to use a relevant tool for ages 13 above.	Changing from Rosenberg to WEMWBS	--	--	OBOL and Active for Health and Fit as a fiddle are already collecting WEMWBS.
HEALTHY SCHOOLS	**Intervention description**	**Before and after questionnaire**	**Collection requirements**	**Contact**	**email**	
Wellbeing mentors	Counsellors meant to identify and address students with barriers to learning and intervene to improve learning and attendance outcomes	CLASI being collected...what are the specific questions? Antidote... data being collected? Attendance and exclusion rates being collected?	TBD; Wellbeing mentors give WEMWBS @ first session last session and a 6 week follow up.	--	--	Already collecting WEMWBS
Physical education activity in schools	Improving quality of PE and time of PA; training for improving quality of teacher education.	Ped-quol being collected, working with Coventry university on researching physical activity.	Might be logistically challenging. Ken seemed interested to use WEMWBS. Difficult if intervention of quality improvement has already begun, cannot measure 'before' state and therefore change.	--	--	Might not be suitable given time line of improvement. Unless there are schools who have not had the intervention yet. Those schools might then be eligible.
SEXUAL HEALTH	**Intervention description**	**Before and after**	**Collection requirements**	**Contact**	**email**	
Respect yourself	RSE in schools- relationship and sex education,. Relationship education – does this increase mental wellbeing?	Current collection for evaluation of this programme? WEMWBS given/taken at the start of the course, after the course? In how many classes? Sampling?	Logistically challenging. This would be a short term collection for an overall outcome that is long term change. Has excellent future potential for monitoring purposes.	--	--	Has potential but possibly would require more time and structural organisation, collaboration, etc. It might be more worthwhile to also or instead measure self-efficacy and the like. Has excellent future potential for monitoring purposes.
Young mums support group	Support group for young mothers gathering around specific topics such as breastfeeding		Logistics unknown- when the groups occur, how often they meet, how long they last, how many attend, how direct the 'intervention'.	--	--	Capacity for data collection and entry and reporting?
INFANT MORTALITY	**Intervention description**	**Before and after**	**Collection requirements**	**Contact**	**email**	
Just for mums	Health and infant nutrition	Before intervention, after intervention, 6 week follow up. How long is the intervention?	How difficult is it to have people complete the scale? Is something already being collected where embedding WEMWBS would be easy?	--	--	Anyone under 13? Expected numbers? Capacity for data collection and entry and reporting?
Stopping smoking in pregnancy	Smoking cessation during pregnancy	Before intervention, after intervention, 6 week follow up. How long is the intervention?	How difficult is it to have people complete the scale? Is something already being collected where embedding WEMWBS would be easy?	--	--	Expected numbers, follw through with data entry and reporting.
PARENTING	**Intervention description**	**Before and after**	**Collection requirements**	**Contact**	**email**	
Triple P	Evidence based parenting improvement course/support.	Client satisfaction survey- 13 questions; SDQ being collected; DAS and WEMWBS measuring different things.	DAS being used- should WEMWBS replace the DAS? If DAS is part of the programme, it might not be good to change this. WEMWBS could be additional.	--	--	DAS and WEMWBS different. Need to be clear and firm on what needs to be collected; what needs to be known about the participants, to help understand the outcomes?
CAF- common assessment framework	Preventing families from going into care by addressing specific issues they have.	There is an initial assessment, Confidence building course?	Already collecting assessment, so WEMWBS incorporated or added on?	--	--	Expected numbers? Questions already being asked?
WORK AND HEALTH	**Intervention description**	**Before and after**	**Collection Requirements**	**Contact**	**email**	
Screening tool	Will be an overall collection using the same tool for each of the project work streams	Questionnaire currently being developed with possibility to collect WEMWBS data	Resistance to include further content into questionnaire. Not clear what will be done with currently collected information.	--	--	Low numbers. resistant to change current questionnaire. WEMWBS might be more suitable or complimentary of DAS.
HEALTH CHECKS	**Intervention description**	**Before and after**	**Collection requirements**	**Contact**	**email**	**Not appropriate.**
ALCOHOL	**Intervention description**	**Before and after**	**Collection requirements**	**Contact**	**email**	
Structured day care	12 week daily group treatment	@ start of 12 week program, middle after, and follow up.	Additional to other data collected	--	--	WEMWBS being collected
Alcohol treatment req.	12 sessions over 6+ months one-one therapy	First session, mid session, last session, follow up.	Additional to other data collected	--	--	WEMWBS being collected
Smoking	Not sure	Not sure	Not sure	Not sure	Not sure	Not sure

APPENDIX 3

Appendix 3_Orthoginal continuum of mental wellbeing, mental health and mental illness. Adapted from Keyes, 2002.



Appendix 4: ALFRED SCHUTZ AND THE THEORY OF SOCIAL PHENOMENOLOGY.

The theory of social phenomenology is important in this thesis because it populates the principles of subtle realism. Instrumental in developing this theory was Alfred Schutz. I discuss key aspects of his ideas relevant to my study.

"The aim of the social sciences is to clarify what is thought about the social world by those living in it" – Alfred Schutz

Alfred Schutz (1899-1959) was an Austrian sociologist whose philosophy communicated the phenomenon of the everyday life (*Lebenswelt, or Life-world*). The social reality which is constructed and described in Schutz's work forms the foundation of social phenomenology. Schutz illustrates, as Mary Rogers describes, how the life-world is made possible and how that world then makes understanding possible (Rogers, 2003). Schutz laid the foundation through which others can come to understand the lived world and how people 'make meaning' in their lives – describing how the act of making meaning is intersubjective, is mutually created. He describes this intersubjectivity as "every act of mine through which I endow the world with meaning refers back to some meaning-endowing act of yours with respect to the same world" (Schutz, 1967 p32).

Schutz was a contemporary of Husserl and Heidegger, two social theorists with great bearing on early to mid-20th century social and philosophical thought. Schutz shares a similar viewpoint with Heidegger that 'knowledge and being' is located contextually through the past and the socio-cultural present. However he differs from Husserl who focuses more on the individual and about a more internal existence and consciousness itself, whereas Schutz takes his work and that of Max Weber, and applies phenomenology to sociology, and thereby creates social

phenomenology as an attempt to understand the workings of the mundane, everyday world.

It is this world that I consider to be most relevant to the present study. Schutz shapes a world where the individual in focus is at the centre of this 'life world' and the past, present, and future are built up around this person, and constantly shape and re-shape how they make meaning. A critical aspect of social phenomenology is context- one's 'stock of knowledge at hand' is shaped indistinguishably by the lived and shared experience of those around that person. This concept develops into what Schutz calls intersubjectivity.

Schutz states that the ..."stock of knowledge includes a multiplicity of meanings established by predecessors, contemporaries, consociates, and myself" illustrating a dimension in which to locate and organise knowledge about experiences. He is essentially opening up a deeper understanding of context. This understanding of context and intersubjectivity is supportive of the mixed methods approach to conducting research. It is also appropriate for developing an understanding of public health interventions which aim to instigate changes in individual lives, but in order to do that with a sense of realism, must acquire a context in which those actions take place. Social phenomenology helps this thinking by investigating the perspective of the participant, their 'stock of knowledge at hand' and their lived, shared and ultimately intersubjective experiences in settings that have histories that are relevant to (and shape) the present.

Appendix 5: Differences in Surveys by year and consultant

	2010 (comparator)	2011	2012
Consultant	MEL	BMG	MEL
Questions removed			
	Reference		Q16 - Do you recycle?
			Q17 - What environmental actions do you take around your home?
			Q20 - Crime in the community – problems in your community
Questions Added			
	Reference	Q21 – Where yes in Q20: Type of illness or disability	Q9 - Meet Friends or relatives
		Q24 to Q29 – EQ5D	Q10 - Social Support – situation where you might need help
		Q40 - Life Satisfaction	Q29 - Life Satisfaction
			Q31 - Describe impairment
			Q33 - 37 EQ5D
			Q40 - Relative Income
			Q41 - Financial Worries
Format changes			
	Reference	Conducted by Computer Assisted Personal Interviewing (CAPI)	Paper and Pencil interview format (PAPI)
			Questionnaire Format changed to two main phases of the survey section 1: 'neighbourhoods and communities' and section 2: 'Health and Wellbeing'
			Introductory letter made health and wellbeing more prominent as an element of the survey than in previous years.

APPENDIX 6

APPENDIX 6: Chapter 5 cross-sectional linear regression tables

The following tables report the individual linear regression results. These tables include variables that differ from year to year, which were removed from the harmonised comparison tables in the main body of this thesis.

2010 Multivariate linear regression determinants of WEMWBS scores for the total population, and stratified population by gender.			
	Association with WEMWBS score (regression coefficient with 95% CI)		
Variable	**Total (n=3370)**	**Men (n=1604)**	**Women (n=1755)**
Interview date			
(before Christmas vs after Christmas)	1.46 (0.88, 2.05)**	1.98 (1.16, 2.79)**	1.03(0.21, 1.85)
Gender	-0.62 (-1.21, -0.03)*	--	--
Age band			
16-24	1.33 (0.26, 2.40)*	1.45(-0.04, 2.95)	1.04 (-0.49, 2.57)
25-34	0.62 (-0.43, 1.67)	1.05 (-0.44, 2.53)	-0.01 (-1.47, 1.46)
35-44	0.23 (-0.81, 1.26)	0.74(-0.72, 2.19)	-0.31 (-1.76, 1.13)
45-54(REFERENCE)	0	0	0
55-64	2.19 (1.08, 3.29)**	1.67 (0.13, 3.21)*	2.49 (0.92, 4.05)**
65-79	3.57 (2.32, 4.83)**	3.26 (1.45,5.08)**	3.79 (2.09, 5.50)**
80+	2.66 (0.89, 4.42)**	3.02 (0.39, 5.64)*	1.68 (-0.64, 4.00)
Disability (yes vs no)	0.41 (-0.59, 1.41)	-.59 (-2.04, 0.85)	1.40 (0.01, 2.78)*
Education			
(no qualifications vs low qualifications)	1.17 (0.40, 1.94)**	.89 (-0.18, 1.98)	1.22 (0.14, 2.31)*
(no qualifications vs high qualifications)	2.29 (1.49, 3.10)**	1.45 (0.32, 2.57)*	2.86 (1.73, 3.99)**
Employment			
(in work vs unemployed)	-1.74 (-2.72, -0.77)**	-2.25 (-3.49, -0.99)**	-0.98 (-2.51, 0.56)
(in work vs economically inactive)	-0.79 (-1.57, -0.22)*	-0.93 (-2.12, 0.27)	-.63 (-1.65, 0.38)
Ethnicity			
(white vs mixed)	0.17 (-2.55, 2.89)	2.88 (-1.77, 7.52)	--
(white vs Asian)	0.98 (0.05, 1.90)*	0.94 (-0.25, 2.13)	--
(white vs Black)	3.25 (1.86, 4.65)**	5.25 (3.39, 7.11)**	--
(white vs Chinese/other)	1.19 (-0.47, 2.84)	2.93 (0.79, 5.07)**	--
Sleep quality			
(poor vs average)	1.78 (0.77, 2.79)**	1.98 (0.43, 3.52)	1.74 (0.41, 3.07)**
(poor vs good)	4.25 (3.27, 5.22)**	4.51 (3.04, 5.99)**	4.17 (2.89, 5.47)**
Self-rated health			
(bad vs good)	6.13 (4.63, 7.62)**	6.89 (4.69, 9.11)**	5.58 (3.55, 7.61)**
(bad vs fair)	3.25 (1.83, 4.68)**	3.53 (1.44, 5.62)**	3.10 (1.17,5.04) **
Fruit and vegetable consumption			
(5+ vs 2 to 4 portions daily)	-1.93 (-2.59, -1.28)**	-2.21 (-3.16,-1.27)**	-1.87 (-2.77,-0.97)**
(5+ vs 1 or fewer portions daily)	-2.47 (-3.53, -1.41)**	-1.67 (-3.13, -0.21)*	-3.48 (-5.01, -1.95)**

APPENDIX 6: Chapter 5 cross sectional tables

Home satisfaction			
(satisfied vs dissatisfied)	-1.85 (-3.10, -0.59)**	-2.73 (-4.59, -0.87)	--
(Satisfied vs neither satisfied nor dissatisfied)	-0.39 (-1.81, 1.04)	-1.16 (-3.21, 0.90)	--
Night-time neighbourhood safety			
(feeling safe vs unsafe)	-1.55 (-2.24, -0.86)**	--	-2.14 (-3.0, -1.28)**
Crime increase in the past year			
(disagree vs agree)	-0.23 (-1.03, 0.57)	--	--
(disagree vs neither or no opinion)	-.018 (-0.68, 0.65)	--	--
Neighbourhood satisfaction			
(satisfied v dissatisfied)	--	-2.16 (-3.76, -0.56)	--
(satisfied v neither satisfied nor dissatisfied)	--	0.18 (-1.63, 2.00)	--

2011 Multivariate linear regression determinants of WEMWBS scores for the total population, and stratified population by gender.			
	Association with WEMWBS score (regression coefficient with 95% CI)		
Variable	Total (n≈2552)	Men (n≈1241)	Women (n≈1336)
Gender	-0.61 (-1.24, 0.02)	--	--
Age band			
16-24	1.04 (-0.11, 2.18)	0.73 (-1.48, 1.63)	1.63 (-0.05, 3.30)
25-34	0.35 (-0.67, 1.38)	-0.14 (-1.61, 1.33)	0.75 (-0.67, 2.18)
35-44	-0.02 (-1.05, 1.00)	-1.04 (-2.50, 0.43)	0.97 (-0.46, 2.39)
45-54(REFERENCE)	0	0	0
55-59	0.05 (-1.44, 1.33)	-0.83 (-2.78, 1.12)	-0.11 (-2.01, 1.78)
60-64	0.69 (-0.69, 2.07)	-0.09 (-1.99, 1.80)	1.67 (-0.34, 3.67)
65-79	0.14 (-1.22, 1.50)	-0.37 (-2.37, 1.64)	0.79 (-1.04, 2.62)
80+	-0.61 (-2.41, 1.19)	-1.42 (-4.06, 1.22)	1.35 (-0.98, 3.67)
Disability			
(none vs some limitations)	-1.23 (-2.58, 0.11)	-0.87(-2.80, 1.06)	-1.60 (-3.39, 0.19)
(none vs many limitations)	-0.79 (-2.44, 0.85)	-2.45 (-4.87, -0.03)*	0.49 (-1.71, 2.69)
Education			
(no qualifications vs low qualifications)	0.60 (-0.22, 1.43)	0.78 (-0.37, 1.94)	0.53(-0.64, 1.70)
(no qualifications vs high qualifications)	0.98 (0.11, 1.84)*	0.77(-0.42, 1.95)	1.17(-0.08, 2.43)
Employment			
(in work vs economically inactive)	-0.30 (-1.13, 0.53)	0.16 (-1.17, 1.48)	-0.79 (-1.87, 0.28)
(in work vs unemployed)	-1.2 (-2.36, -0.03)*	-0.19 (-1.76, 1.38)	-2.51 (-4.28, -0.76)**
Sleep quality			
(poor vs average)	2.23 (1.20, 3.26)***	2.44 (0.88, 4.01)**	1.64 (0.29, 2.99)**
(poor vs good)	3.49 (2.48, 4.50)***	3.35 (1.81, 4.89)***	3.54 (2.22, 4.86)***
Self-rated health			
(bad vs good)	4.62 (2.79, 6.45)***	3.49 (0.75, 6.22)**	4.99 (2.51, 7.46)***
(bad vs fair)	2.73 (0.97, 4.48)**	0.74 (-1.93, 3.41)	3.57 (1.25, 5.89)**
Fruit and vegetable consumption			
(5+ vs 2 to 4 portions daily)	-1.07 (-1.79, -0.35)**	-0.76(-1.80, 0.28)	-1.21(-2.19, -0.22)**
(5+ vs 1 or fewer portions	-1.69 (-2.81, -0.56)**	-1.81(-3.35, -0.28)*	-1.44 (-3.04, 0.16)

APPENDIX 6: Chapter 5 cross sectional tables

daily)			
Physical Activity, Any			
(5+ vs 1 to 4 times per week)	-0.99 (-1.73, -0.27)**	--	-0.93 (-1.93, 0.07)
(5+ vs never per week)	-2.73 (-3.77, -1.69)**	--	-3.30(-4.72, -1.87)***
Physical Activity, Sport			
(5+ vs 1 to 4 times per week)	-.594 (-2.07, 0.890)	--	-0.80 (-3.36, 1.76)
(5+ vs never per week)	0.49 (-0.98, 1.97)	--	0.38 (-2.12, 2.89)
Life Satisfaction			
(satisfied vs dissatisfied)	-5.90 (-7.56, -4.24)***	-7.03(-9.35, -4.71)***	-4.83(-7.21, -2.44)***
(satisfied vs very satisfied)	2.69 (1.99, 3.39)***	3.23 (2.26, 4.20)***	2.05 (1.06, 3.05)***
Home satisfaction			
(satisfied vs dissatisfied)	-0.65 (-2.23, 0.93)	--	-1.28 (-3.32, 0.77)
(satisfied vs neither satisfied nor dissatisfied)	-1.39 (-2.88, 0.09)	--	-2.65 (-4.79, -0.52)**
Night-time neighbourhood safety			
(feeling safe vs unsafe)	-0.64 (-1.42, 0.14)	-1.25 (-2.54, 0.02)	--
Crime increase in the past year			
(disagree vs agree)	-1.29 (-2.09, -0.51)**	-1.65(-2.79, -0.52)**	-1.22 (-2.30, -0.14)*
(disagree vs neither or no opinion)	-0.88 (-1.60, -0.15)**	-0.44 (-1.45, 0.56)	-1.23 (-2.26, -0.19)
Neighbourhood satisfaction			
(satisfied v dissatisfied)	--	2.92 (0.92, 4.92)**	--
(satisfied v neither satisfied nor dissatisfied)	--	0.69 (-1.09, 2.46)	--

2012 Multiple linear regression determinants of WEMWBS scores for the total population, and stratified population by gender.			
	Association with WEMWBS score (regression coefficient with 95% CI)		
Variable	**Total (n≈2111)**	**Men (n≈1020)**	**Women (n≈1095)**
Adjusted Variables			
Gender	-1.11 (-1.84, -0.39)**	--	--
Age band			
16-24	2.19 (0.77, 3.61)**	2.95 (0.92, 4.98)**	1.59 (-0.28, 3.45)
25-34	1.90 (0.64, 3.16)**	2.05 (0.27, 3.84)*	2.35 (0.61, 4.10)**
35-44	1.17 (-0.06, 2.4)	2.13 (0.40, 3.85)*	0.45 (-1.28, 2.18)
45-54(REFERENCE)	Reference group	Reference group	Reference group
55-64	0.91 (-0.41, 2.22)	0.52 (-1.28, 2.33)	1.55 (-0.35, 3.47)
65-74	-0.01 (-1.56, 1.53)	0.04 (-2.11, 2.19)	0.41 (-1.80, 2.62)
75+	-0.67 (-2.61, 1.28)	-0.16 (-2.86, 2.54)	-0.27 (-2.93, 2.39)
Disability			
None v limited a little	-2.34 (-3.45, -1.22)**	-1.53 (-3.04, -0.02)*	-3.35 (-4.96, -1.74)**
None v limited a lot	-4.59 (-5.99, -3.18)**	-3.87 (-5.89, -1.85)**	-4.63 (-6.6, -2.66)**
Education			
No qualifications v low qualifications	0.94 (0.00, 1.89)*	1.48 (0.20, 2.76)*	0.62 (-0.75, 1.99)
No qualifications v high qualifications	0.66 (-0.38, 1.69)	0.74 (-0.62, 2.1)	0.87 (-0.66, 2.40)
Employment			
In work v economically	-0.17 (-1.08, 0.73)	-0.86 (-2.29, 0.57)	0.25 (-0.95, 1.45)

inactive			
In work v unemployed	-0.75 (-2.06, 0.56)	-1.05 (-2.72, 0.61)	-2.45 (-4.51, -0.40)*
Health & Lifestyle			
Sleep quality			
Poor v average	4.03 (2.94, 5.13)	4.07 (2.45, 5.68)**	3.14 (1.53, 4.75)**
Poor v good	6.04 (4.94, 7.14)	6.19 (4.60, 7.77)**	4.60 (2.79, 6.40)**
Sleep Hours			
7-8 v 6 or fewer hours	--	--	-1.46 (-2.72, -0.21)*
7-8 v 9+ hours	--	--	1.01 (-1.16, 3.19)
Fruit and vegetable consumption			
5+ v 2 to 4 portions daily	-1.12 (-1.92, -0.32)*	-1.45 (-2.62, -0.29)*	-1.34 (-2.43, -0.25)*
5+ v 1 or fewer portions daily	-2.09 (-3.5, -0.65)*	-3.13 (-5.04, -1.24)**	-1.87 (-4.04, 0.31)
Physical Activity, Any			
5+ v 1 to 4 times per week	-1.31 (-2.06, -0.56)**	-1.45 (-2.51, -0.39)**	-1.06 (-2.12, -0.01)*
5+ v never per week	-1.86 (-3.11, -0.63)**	-1.47 (-3.11, 0.17)	-2.48 (-4.36, -0.60)**
Smoking			
Never smoked v currently	-0.95 (-1.83, -0.07)*	--	-1.11 (-2.34, 0.12)
Never smoked v no longer	-1.29 (-2.36, -0.24)*	--	-0.98 (-2.64, 0.68)
Social Support-Needing help			
Being ill in bed			
Would ask for help v no	-1.50 (-2.47, -0.53)**	-1.33 (-3.24, 0.58)	--
Would ask for help v it depends	-0.29 (-2.19, 1.61)	0.51 (-2.69, 3.73)	--
Serious personal crisis			
Would ask for help vs no	--	-0.65 (-2.51, 1.21)	--
Would ask for help v it depends	--	-3.40 (-5.8, -0.96)**	--
Relationship status			
Married/cohabiting v single	0.98 (0.06, 1.90)*	1.22 (-0.07, 2.50)	--
Separated, divorced or widowed v single	0.29 (-1.00, 1.59)	-1.11 (-3.11, 0.88)	--
Neighbourhoods & Communities			
Home satisfaction			
Satisfied v dissatisfied	-1.67 (-3.32, -0.03)*	--	-3.38 (-5.75, -1.00)**
Satisfied v neither satisfied nor dissatisfied	-0.21 (-2.17, 1.74)	--	-0.30 (-3.06, 2.46)
Night-time neighbourhood safety			
Feeling safe v unsafe	-0.80 (-1.75, 0.15)	--	-0.75 (-1.97, 0.48)
Crime increase in			

APPENDIX 6: Chapter 5 cross sectional tables

the past year			
Disagree v agree	-0.57 (-1.52, 0.39)	-1.51 (-2.77, -0.24)*	--
Disagree v neither or no opinion	0.33 (-0.48, 1.14)	-0.18 (-1.29, 0.94)	--
Neighbourhood satisfaction			
Satisfied v dissatisfied	-1.89 (-3.40, -0.38)*	--	-2.48 (-4.62, -0.35)*
Satisfied v neither satisfied nor dissatisfied	0.33 (-1.36, 2.02)	--	0.47 (-2.01, 2.95)
Financial status			
Money worries			
Never v Almost all the time	-3.74 (-5.48, -1.99)**	-4.47 (-6.48, -2.46)**	-6.49 (-8.56, -4.41)**
Never v Often	-2.09 (-3.39, -0.80)**	-1.50 (-2.96, -0.03)*	-4.20 (-5.71, -2.69)**
Never v Only sometimes	-1.37, (-2.37, -0.37)**	-1.10 (-2.22, 0.03)	-2.43 (-3.61, -1.24)**
Relative Income			
Comfortable v coping	-0.40 (-1.36, 0.55)	--	--
Comfortable v difficult	-1.88 (-3.26, -0.52)**	--	--
Comfortable v very difficult	-2.95 (-5.47, -0.43)*	--	--

Appendix 6.1

The following tables present each independent variable (IV) question as asked with all response options and frequencies, with the last column showing the collapsed categories. Each IV table is followed by the collapsed variable version of that IV. Not all IVs required a collapsed recode. Some categories have more than one collapsed recode for regression 'dummy' variable coding.

Demographics

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	1769	47.2	47.4	47.4
	Female	1967	52.5	52.6	100.0
	Total	3736	99.6	100.0	
Missing	System	14	.4		
Total		3750	100.0		

Q38b. Age band					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	16-24	698	18.6	18.7	18.7
	25-34	609	16.2	16.3	34.9
	35-44	583	15.5	15.6	50.5
	45-54	524	14.0	14.0	64.5
	55-59	217	5.8	5.8	70.3
	60-64	288	7.7	7.7	78.0
	65-79	628	16.7	16.8	94.8
	80+	193	5.1	5.2	100.0
	Total	3740	99.7	100.0	
Missing	System	10	.3		
Total		3750	100.0		

Q33. Which of the following best describes your current economic status?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	In full time paid work	954	25.4	25.5	25.5	in work
	In part time paid work	497	13.3	13.3	38.8	in work
	Self employed	114	3.0	3.0	41.8	in work
	Taking part in a government training programme (e.g. trade and modern apprenticeships, work based learning for adults)	11	.3	.3	42.1	unemployed
	Registered unemployed/signing on for Job Seekers Allowance	213	5.7	5.7	47.8	unemployed
	Not registered unemployed but	61	1.6	1.6	49.4	unemployed

	actively seeking work (i.e. have actively looked for work in the last 4 weeks)					
	At home/not seeking work - (looking after the home or family)	289	7.7	7.7	57.1	Unpaid work/ economically inactive
	Long-term sick or disabled	169	4.5	4.5	61.7	unemployed
	Retired	955	25.5	25.5	87.2	Retired/economically inactive
	In full-time education	414	11.0	11.1	98.2	Student/ economically inactive
	Doing unpaid/voluntary work	21	.6	.6	98.8	Unpaid work/ economically inactive
	Carer	17	.5	.5	99.3	Unpaid work/ economically inactive
	Other, please specify	28	.7	.7	100.0	Missing
	Total	3743	99.8	100.0		
Missing	System	7	.2			Missing
Total		3750	100.0			

Q33 RECODE employment status recode

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	in work	1565	41.7	42.1	42.1
	unemployed	454	12.1	12.2	54.3
	unpaid work	327	8.7	8.8	63.1
	retired	955	25.5	25.7	88.9
	student	414	11.0	11.1	100.0
	Total	3715	99.1	100.0	
Missing	System	35	.9		
Total		3750	100.0		

Q33 RECODE employment status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	in work	1565	41.7	42.1	42.1
	unemployed	454	12.1	12.2	54.3
	economically inactive	1696	45.2	45.7	100.0
	Total	3715	99.1	100.0	
Missing	System	35	.9		
Total		3750	100.0		

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Q36. Which of these is your highest qualification?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapse variable category
Valid	Level 1: 1+ 'O' levels/CSE/GCSE (any grade), NVQ level 1, Foundation GNVQ	353	9.4	9.5	9.5	levels 1 & 2 and other
	Level 2: 5+ 'O' levels, 5+ CSEs (grade 1), 5+ GCSEs (grade A - C), School Certificate, 1+ 'A' levels/'AS' levels, NVQ le	540	14.4	14.5	24.0	levels 1 & 2 and other
	Level 3: 2+ 'A' levels, 4+ 'AS' levels, Higher School Certificate, NVQ level 3, Advanced GNVQ or equivalents.	517	13.8	13.9	37.8	Levels 3 & 4
	Level 4/5: First degree, Higher Degree, NVQ levels 4 - 5, HNC, HND, Qualified Teacher Status, Qualified Medical Doctor,	705	18.8	18.9	56.8	Levels 3 & 4/5
	Other qualifications/level unknown: Other qualifications (e.g. City and Guilds, RSA/OCR, BTEC/Edexcel), Other Profession	328	8.7	8.8	65.6	levels 1 & 2 and other
	No qualifications: No academic, vocational or professional qualifications.	1283	34.2	34.4	100.0	no qualifications
	Total	3726	99.4	100.0		
Missing	System	24	.6			
Total		3750	100.0			

Q36 RECODE educational qualifications					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no qualifications	1283	34.2	34.4	34.4
	levels 1 & 2 and other	1221	32.6	32.8	67.2
	levels 3 and 4/5	1222	32.6	32.8	100.0
	Total	3726	99.4	100.0	
Missing	System	24	.6		
Total		3750	100.0		

APPENDIX 6.1

Q39. What is your marital status? Select option that best fits.						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	Single (Never married and never registered a same-sex civil partnership	1176	31.4	31.6	31.6	Single
	Co-habiting	275	7.3	7.4	39.0	married, co-habiting, same sex partnership
	Married	1654	44.1	44.4	83.4	married, co-habiting, same sex partnership
	Separated but still legally married	35	.9	.9	84.4	separated, divorced, widowed
	Divorced	216	5.8	5.8	90.2	separated, divorced, widowed
	Widowed	359	9.6	9.6	99.8	separated, divorced, widowed
	In a registered same-sex civil partnership	2	.1	.1	99.9	married, co-habiting, same sex partnership
	Separated but still legally in a same-sex civil partnership	5	.1	.1	100.0	separated, divorced, widowed
	Total	3722	99.3	100.0		
Missing	System	28	.7			Missing
Total		3750	100.0			

Q39 RECODE marital status recode inc same sex partnerships					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single	1176	31.4	31.6	31.6
	married, co-habiting, same sex partnership	1931	51.5	51.9	83.5
	separated, divorced, widowed	615	16.4	16.5	100.0
	Total	3722	99.3	100.0	
Missing	System	28	.7		
Total		3750	100.0		

Q43. Which of the following groups do you consider you belong to?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	White - White British	2668	71.1	71.9	71.9	White

	White - White Irish	73	1.9	2.0	73.8	White
	White - Any Other White Background	182	4.9	4.9	78.7	White
	Mixed - White and Black Caribbean	21	.6	.6	79.3	Mixed
	Mixed - White and Black African	17	.5	.5	79.8	Mixed
	Mixed - White and Asian	4	.1	.1	79.9	Mixed
	Mixed - Any Other Mixed Background	3	.1	.1	80.0	Mixed
	Asian or Asian - British Indian	324	8.6	8.7	88.7	Asian
	Asian or Asian - British Pakistani	103	2.7	2.8	91.5	Asian
	Asian or Asian British - Bangladeshi	20	.5	.5	92.0	Asian
	Asian or Asian British - Any Other Asian Background	3	.1	.1	92.1	Asian
	Black or Black British - Caribbean	51	1.4	1.4	93.5	Black
	Black or Black British - African	126	3.4	3.4	96.8	Black
	Chinese	41	1.1	1.1	98.0	Chinese and Other
	Any Other Ethnic Group	76	2.0	2.0	100.0	Chinese and Other
	Total	3712	99.0	100.0		
Missing	System	38	1.0			Missing
Total		3750	100.0			

Grouped Ethnicity					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	2923	77.9	78.7	78.7
	Mixed	45	1.2	1.2	80.0
	Asian	450	12.0	12.1	92.1
	Black	177	4.7	4.8	96.8
	Chinese and Other	117	3.1	3.2	100.0
	Total	3712	99.0	100.0	
Missing	System	38	1.0		
Total		3750	100.0		

Health and Lifestyle variables

Q21. First of all, would you say in general your health is…?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	Very	984	26.2	26.3	26.3	Good

	good					
	Good	1836	49.0	49.0	75.3	Good
	Fair	672	17.9	17.9	93.3	Fair
	Bad	208	5.5	5.6	98.8	Bad
	Very bad	44	1.2	1.2	100.0	Bad
	Total	3744	99.8	100.0		
Missing	System	6	.2			
Total		3750	100.0			

RECODE Q21 SRH good fair or bad					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	good	2820	75.2	75.3	75.3
	fair	672	17.9	17.9	93.3
	poor	252	6.7	6.7	100.0
	Total	3744	99.8	100.0	
Missing	System	6	.2		
Total		3750	100.0		

Q22. Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	Yes limited a lot	318	8.5	8.5	8.5	Yes
	Yes limited a little	408	10.9	10.9	19.4	Yes
	No	3015	80.4	80.6	100.0	No
	Total	3741	99.8	100.0		
Missing	System	9	.2			
Total		3750	100.0			

RECODE Q22 Disability					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	726	19.4	19.4	19.4
	No	3015	80.4	80.6	100.0
	Total	3741	99.8	100.0	
Missing	System	9	.2		
Total		3750	100.0		

Q23. How would you rate the quality of your sleep in the last month?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	474	12.6	12.7	12.7
	Average	1074	28.6	28.8	41.4
	Good	2187	58.3	58.6	100.0
	Total	3735	99.6	100.0	
Missing	Not sure	7	.2		

	System	8	.2		
	Total	15	.4		
Total		3750	100.0		

Q24. And approximately, how long have you typically slept for per night during the last month (including naps during the day).						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	1	3	.1	.1	.1	6 hours or less
	2	21	.6	.6	.6	6 hours or less
	3	66	1.8	1.8	2.4	6 hours or less
	4	172	4.6	4.6	7.0	6 hours or less
	5	318	8.5	8.5	15.6	6 hours or less
	6	665	17.7	17.9	33.4	6 hours or less
	7	1006	26.8	27.0	60.5	7 to 8 hours
	8	1167	31.1	31.4	91.8	7 to 8 hours
	9	165	4.4	4.4	96.3	9 hours or more
	10	106	2.8	2.8	99.1	9 hours or more
	11	5	.1	.1	99.2	9 hours or more
	12	25	.7	.7	99.9	9 hours or more
	13	3	.1	.1	100.0	9 hours or more
	Total	3722	99.3	100.0		
Missing	System	28	.7			Missing
Total		3750	100.0			

RECODE Q24 number of hours slept on average					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6 hours or less	1245	33.2	33.4	33.4
	7 to 8 hours	2173	57.9	58.4	91.8
	9 hours or more	304	8.1	8.2	100.0
	Total	3722	99.3	100.0	
Missing	System	28	.7		
Total		3750	100.0		

Q26. Do you, or have you ever, smoked?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, I currently smoke	961	25.6	25.7	25.7
	Yes, but I no longer	340	9.1	9.1	34.7

	smoke				
	No	2444	65.2	65.3	100.0
	Total	3745	99.9	100.0	
Missing	System	5	.1		
Total		3750	100.0		

Q25. How many portions of fruit or vegetables would you say you eat in a typical day?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	At least 5 portions	990	26.4	27.2	27.2	5+ portions
	At least 3 portions, but less than 5 portions	1248	33.3	34.2	61.4	2-4 portions
	At least one portion, but less than 3 portions	1032	27.5	28.3	89.7	2-4 portions
	About one portion	236	6.3	6.5	96.2	1 or fewer portions
	Less than one portion	138	3.7	3.8	100.0	1 or fewer portions
	Total	3644	97.2	100.0		
Missing	Don't know	87	2.3			Missing
	Refused	13	.3			
	System	6	.2			
	Total	106	2.8			
Total		3750	100.0			

Q25 RECODE fruit and veggie amounts					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5+ portions	990	26.4	27.2	27.2
	2-4 portions	2280	60.8	62.6	89.7
	1 or fewer portions	374	10.0	10.3	100.0
	Total	3644	97.2	100.0	
Missing	System	106	2.8		
Total		3750	100.0		

Q30. How many days in an average week, do you drink more than [WOMEN 2-3 units] [MEN 3-4 units] of alcohol?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	0 days	860	22.9	43.4	43.4	never drink over the daily limit
	1 day	535	14.3	27.0	70.3	1-3 days a week
	2 days	309	8.2	15.6	85.9	1-3 days a week
	3 days	130	3.5	6.6	92.5	1-3 days a week

	4 days	47	1.3	2.4	94.9	4-7 days a week
	5 days	35	.9	1.8	96.6	4-7 days a week
	6 days	18	.5	.9	97.5	4-7 days a week
	7 days	49	1.3	2.5	100.0	4-7 days a week
	Total	1983	52.9	100.0		
Missing	Prefer not to say	6	.2			Missing
	Don't know	108	2.9			Missing
	System	1653	44.1			Missing
	Total	1767	47.1			
Total		3750	100.0			

Q30 RECODE drink over the daily limit, days per week					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never drink over the daily limit	860	22.9	43.4	43.4
	1-3 days a week	974	26.0	49.1	92.5
	4-7 days a week	149	4.0	7.5	100.0
	Total	1983	52.9	100.0	
Missing	System	1767	47.1		
Total		3750	100.0		

Q31a Take part in ANY physical activity* (e.g. brisk walking, cycling, housework, gardening, DIY, swimming, or sport)						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	At least 5 times a week	1573	41.9	42.1	42.1	5+ times per week
	3-4 times a week	783	20.9	21.0	63.1	once to 4 times per week
	Less than 3 times a week	789	21.0	21.1	84.2	once to 4 times per week
	Never	591	15.8	15.8	100.0	Never
	Total	3736	99.6	100.0		
Missing	Don't know	4	.1			Missing
	System	10	.3			Missing
	Total	14	.4			
Total		3750	100.0			

q31a ANY physical activity weekly

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		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5+ times per week	1573	41.9	42.1	42.1
	Once to 4 times per week	1572	41.9	42.1	84.2
	Never	591	15.8	15.8	100.0
	Total	3736	99.6	100.0	
Missing	System	14	.4		
Total		3750	100.0		

Participate in any sport (e.g. playing football, netball, attending an aerobics class, visiting the gym, visit a sports/leisure centre, running, cycling, swimming etc						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	At least 5 times a week	174	4.6	4.7	4.7	5+ times per week
	3-4 times a week	312	8.3	8.4	13.1	Once to 4 times per week
	Less than 3 times a week	687	18.3	18.5	31.5	Once to 4 times per week
	Never	2545	67.9	68.5	100.0	Never
	Total	3718	99.1	100.0		
Missing	Don't know	19	.5			Missing
	System	13	.3			Missing
	Total	32	.9			
Total		3750	100.0			

q31b Plays sports weekly					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5+ times per week	174	4.6	4.7	4.7
	once to 4 times per week	999	26.6	26.9	31.5
	never	2545	67.9	68.5	100.0
	Total	3718	99.1	100.0	
Missing	System	32	.9		
Total		3750	100.0		

Neighbourhoods and Communities

Q3. And generally, how satisfied are you with THIS NEIGHBOURHOOD as a place to live?						
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**	**Collapsed variable category**
Valid	Very satisfied	1290	34.4	34.6	34.6	satisfied
	Fairly satisfied	1948	51.9	52.3	86.9	satisfied
	Neither satisfied nor dissatisfied	202	5.4	5.4	92.3	Neither satisfied nor dissatisfied
	Slightly dissatisfied	186	5.0	5.0	97.3	dissatisfied
	Very dissatisfied	99	2.6	2.7	100.0	dissatisfied
	Total	3725	99.3	100.0		
Missing	Don't know	16	.4			missing
	System	9	.2			
	Total	25	.7			
Total		3750	100.0			

RECODE neighbourhood satisfaction					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	satisfied	3238	86.3	86.9	86.9
	neither satisfied nor dissatisfied	202	5.4	5.4	92.3
	dissatisfied	285	7.6	7.7	100.0
	Total	3725	99.3	100.0	
Missing	System	25	.7		
Total		3750	100.0		

Q6. Do you agree or disagree that you can influence decisions affecting your local area?						
		Frequency	Percent	Valid Percent	Cumulative Percent	**Collapsed variable**
Valid	Definitely agree	231	6.2	7.6	7.6	Agree
	Tend to agree	720	19.2	23.8	31.4	Agree
	Tend to disagree	967	25.8	31.9	63.3	Disagree
	Definitely disagree	1112	29.7	36.7	100.0	Disagree
	Total	3030	80.8	100.0		
Missing	Don't know	716	19.1			Missing
	System	4	.1			
	Total	720	19.2			
Total		3750	100.0			

Q6 RECODE influence area decisions

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		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	951	25.4	31.4	31.4
	Disagree	2079	55.4	68.6	100.0
	Total	3030	80.8	100.0	
Missing	System	720	19.2		
Total		3750	100.0		

Q10. To what extent do you agree or disagree that this neighbourhood is a place where people from different backgrounds get on well together?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable
Valid	Definitely agree	1438	38.3	40.8	40.8	Agree
	Tend to agree	1739	46.4	49.3	90.2	Agree
	Tend to disagree	158	4.2	4.5	94.6	Disagree
	Definitely disagree	76	2.0	2.2	96.8	Disagree
	Too few people live in the local area to judge	113	3.0	3.2	100.0	missing
	Total	3524	94.0	100.0		
Missing	Don't know	222	5.9			missing
	System	4	.1			
	Total	226	6.0			
Total		3750	100.0			

Q10 RECODE q10 diverse backgrounds get on well together					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	3177	84.7	93.1	93.1
	Disagree	234	6.2	6.9	100.0
	Total	3411	91.0	100.0	
Missing	System	339	9.0		
Total		3750	100.0		

Q11. First of all, is your property….						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	Owner Occupied	2264	60.4	60.4	60.4	Owner
	Rented from Whitefriars	434	11.6	11.6	72.0	Rented
	Rented from another Housing Association e.g. Midland Heart	182	4.9	4.9	76.9	Rented
	Rented from Private Landlord	706	18.8	18.8	95.7	Rented
	Shared Ownership	12	.3	.3	96.0	Owner
	Other, please specify	149	4.0	4.0	100.0	Owner
	Total	3747	99.9	100.0		

Missing	System	3	.1			
Total		3750	100.0			

Q11 RECODE housing tenure					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	owned	2425	64.7	64.7	64.7
	rented	1322	35.3	35.3	100.0
	Total	3747	99.9	100.0	
Missing	System	3	.1		
Total		3750	100.0		

Q12. And how satisfied are you with the quality of your home?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	Very satisfied	1809	48.2	48.4	48.4	Satisfied
	Fairly satisfied	1553	41.4	41.5	89.9	Satisfied
	Neither satisfied nor dissatisfied	152	4.1	4.1	94.0	Neither satisfied nor dissatisfied
	Slightly dissatisfied	149	4.0	4.0	98.0	Dissatisfied
	Very dissatisfied	76	2.0	2.0	100.0	Dissatisfied
	Total	3739	99.7	100.0		
Missing	Don't know	7	.2			
	System	4	.1			Missing
	Total	11	.3			
Total		3750	100.0			

Q12 RECODE home satisfaction					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	satisfied	3362	89.7	89.9	89.9
	neither satisfied no dissatisfied	152	4.1	4.1	94.0
	dissatisfied	225	6.0	6.0	100.0
	Total	3739	99.7	100.0	
Missing	System	11	.3		
Total		3750	100.0		

Q18b. How safe do you feel around your neighbourhood at night?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	Very safe	878	23.4	24.1	24.1	Safe
	Safe	1818	48.5	49.9	74.0	Safe
	Not very safe	702	18.7	19.3	93.2	Unsafe
	Very	246	6.6	6.8	100.0	Unsafe

	unsafe					
	Total	3644	97.2	100.0		
Missing	Don't know	103	2.7			Missing
	System	3	.1			
	Total	106	2.8			
Total		3750	100.0			

Q18b RECODE safe at night					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	safe	2696	71.9	73.9	73.9
	unsafe	950	25.3	26.1	100.0
	Total	3646	97.2	100.0	
Missing	System	104	2.8		
Total		3750	100.0		

Q19. To what extent do you agree with the following statement 'Crime in my neighbourhood has increased over the last 12 months'?						
		Frequency	Percent	Valid Percent	Cumulative Percent	Collapsed variable category
Valid	Agree strongly	319	8.5	8.5	8.5	Agree
	Agree slightly	571	15.2	15.3	23.8	Agree
	Neither agree nor disagree	995	26.5	26.7	50.5	Neither agree nor disagree
	Disagree slightly	649	17.3	17.4	67.9	Disagree
	Disagree strongly	546	14.6	14.6	82.5	Disagree
	No opinion	455	12.1	12.2	94.7	Neither agree nor disagree
	Have not lived in the area for 12 months	198	5.3	5.3	100.0	Neither agree nor disagree
	Total	3733	99.5	100.0		
Missing	System	17	.5			Missing
Total		3750	100.0			

Q19 RECODE crime increase in past year					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	890	23.7	23.8	23.8
	neither agree or disagree or no opinion	1648	43.9	44.1	68.0
	disagree	1195	31.9	32.0	100.0
	Total	3733	99.5	100.0	
Missing	System	17	.5		
Total		3750	100.0		

ATR & WEMWBS
Flow chart for collection
MAY2011

APPENDIX 7.1

ATR client attends Session 1. WEMWBS ONE offered to client. This includes an information and consent form, the WEMWBS, and demographic questions with room for comments.

If consent given and WEMWBS completed, record client number on envelope, consent form, and WEMWBS ONE for tracking purposes

If consent not given, record client number only on record sheet with date of first session. No further evaluation for this client.

File and securely store Client's 'pack' as you do other client confidential information.

Session 7: Client to complete WEMWBS TWO. Ensure Client number is recorded in top right corner. File securely as normal.

Session 11: Client to complete WEMWBS THREE. This is the end of intervention WEMWBS. Ensure Client number is recorded in top right corner. File securely as normal.

Set reminder for 6 week follow up WEMWBS.

6 week follow up: WEMWBS FOUR collection attempted. Follow protocol for follow up procedure. Record attempt numbers and client number.

Remove Client consent form from client's WEMWBS pack. Store consent form with other confidential client information.

This completes WEMWBS data collection.

Report sampling numbers for collection time period, collate WEMWBS packs, and email RP when packs are ready to be collected.

RP to pick up the envelopes/packs to begin entry and analysis. Each envelope should have: WEMWBS ONE, TWO, THREE, and FOUR. Envelope should NOT have a consent form.

SDC & WEMWBS
Flow chart for collection
MAY2011

APPENDIX 7.2

SDC client attends Week 1. WEMWBS ONE offered to client. This includes an information and consent form, the WEMWBS, and demographic questions with room for comments.

If consent given and WEMWBS completed, record client number on envelope, consent form, and WEMWBS ONE for tracking purposes

If consent not given, record client number only on record sheet with date of first session. No further evaluation for this client.

File and securely store Client's 'pack' as you do other client confidential information.

Week 8: Client to complete WEMWBS TWO. Ensure Client number is recorded in top right corner. File securely as normal.

Week 12: Client to complete WEMWBS THREE. This is the end of intervention WEMWBS. Ensure Client number is recorded in top right corner. File securely as normal.

Set reminder for 6 week follow up WEMWBS.

6 week follow up: WEMWBS FOUR collection attempted. Follow protocol for follow up procedure. Record attempt numbers and client number.

Remove Client consent form from client's WEMWBS pack. Store consent form with other confidential client information.

This completes WEMWBS data collection.

Report sampling numbers for collection time period, collate WEMWBS packs, and email RP when packs are ready to be collected.

RP to pick up the (approx 100) envelopes/packs to begin entry and analysis. Each envelope should have: WEMWBS ONE, TWO, THREE, and FOUR. Envelope should NOT have a consent form.

Wellbeing mentoring & WEMWBS
Flow chart for collection
March 2011

APPENDIX 7.3

Student begins mentoring sessions with Wellbeing Mentor: *Ensure they are at least 13 years old and they will attend sessions over a period longer than 2 weeks. If so, assign WEMWBS envelope to pupil by completing the following:*

Using '**WEMWBS participation form',** inform pupil of this wellbeing task and then complete the boxes.

If they are happy to complete the scale, complete information on the first WEMWBS scale, then give to pupil to complete the scale. It's okay to help if they have difficulty reading or understanding terms.

For easier tracking, write ID number from envelope on the bottom of each WEMWBS page.

After pupil completes **WEMWBS 1**, file the pupil's WEMWBS packet back into envelope.

Store securely for duration of sessions.

At the **last scheduled session** with a given pupil, have them complete WEMWBS at the beginning of the session using '**WEMWBS 2**' scale.

After completion, file the pupil's WEMWBS packet into same envelope. Return to secure storage.

Pupil to complete '**WEMWBS 3'** the third and final scale, 6 to 10 weeks after completion of sessions (WEMWBS 2).

*Feel free to write down **anything** you feel noteworthy and include in the envelope.*

Making note of pupil, put a reminder in your diary for 6 to 10 weeks from date of mentoring completion (WEMWBS 2).

This will be to arrange to meet with pupil and have them complete **WEMWBS 3**.

Put that pupil's completed WEMWBS pack (participation form + 3 WEMWBS) back in envelope. Send through <u>internal mail</u> to -- at this address →

Thank you for your time and effort!

[redacted]

OBOL & WEMWBS
Flow chart for collection
March 2011

APPENDIX 7.4

From April/May start point: For the first consecutive 100 new OBOL participant/families attending OBOL, ensure monitoring forms and start questionnaire including WEMWBS are given to participant/family for completion before class.

Only people aged 13 or older are eligible to complete WEMWBS.

Completed questionnaires + WEMWBS are returned to Be Active Be Healthy Administrator

Be Active Be Healthy Administrator inputs questionnaire information into Be Active Be Healthy database as usual. This is the 'baseline' measure.

End of course:

If still attending OBOL at the end of the 10 week course, have the participant/family complete the 'end of course' questionnaire +WEMWBS . Drop outs are noted on data base with date dropped out

Please keep a record of those who drop out or stop attending OBOL.

Input data.

Return end of course questionnaires+ WEMWBS to secure storage/filing as normal.

Check reminder is set for 3 month follow up from end of course questionnaires+ WEMWBS (as normal.

At 3 month follow up:

If participant/family is reached, have them complete follow up questionnaires+ WEMWBS. Non-completers are noted

Please keep a record of those who could not be reached at the 3 month follow up.

This completes WEMWBS data collection.

Please input data and ensure participants are accurately tracked- That the participant number is the same for all three samples.

MT to send RP the extracted data in an excel spreadsheet. Please include all participants who completed at least one WEMWBS, their age, dates of completion and fruit and vegetable consumption, physical activity, knowledge gained question.

FAAF & WEMWBS
Flow chart for collection
April 2011

APPENDIX 7.5

FAAF new participant attends a given class. Monitoring forms, start questionnaire +WEMWBS given to participant for completion.

Questionnaires sent by instructor to Age UK Coventry and stored as normal.

Upon receiving new starter WEMWBS, set reminder for 6 and 12 week follow ups.

Age UK Coventry to notify instructor of 6 week follow up as normal. The course follow up questionnaire already includes WEMWBS.

Please keep a record of those who drop out or stop coming to FAAF who have begun the WEMWBS.

If still attending at the 6 week follow up FAAF session, participant completes the course follow up questionnaire +WEMWBS . Ensure ID is recorded and matches baseline questionnaire.

Return to secure storage/filing as normal. Check reminder is set for 12 week from baseline for follow up.

Third and final WEMWBS scale completed by participant, 12 weeks after baseline WEMWBS. Record ID number on WEMWBS 12 week follow up.

Please keep a record of those who drop out or stop coming to FAAF who have begun the WEMWBS.

This completes WEMWBS data collection.

Make copies of the participants 'start' and ' 6 week follow up' questionnaires and place in envelope with 12 week follow up WEMWBS.

I'll pick up the (approx 100) envelope 'packs' so I can begin entry and analysis. Each envelope should have: One start questionnaire; one follow up questionnaire; and one 12-week follow up WEMWBS.

APPENDIX 8

Evaluation Design figures.

Figure: Alcohol Treatment Requirement mental wellbeing evaluation design

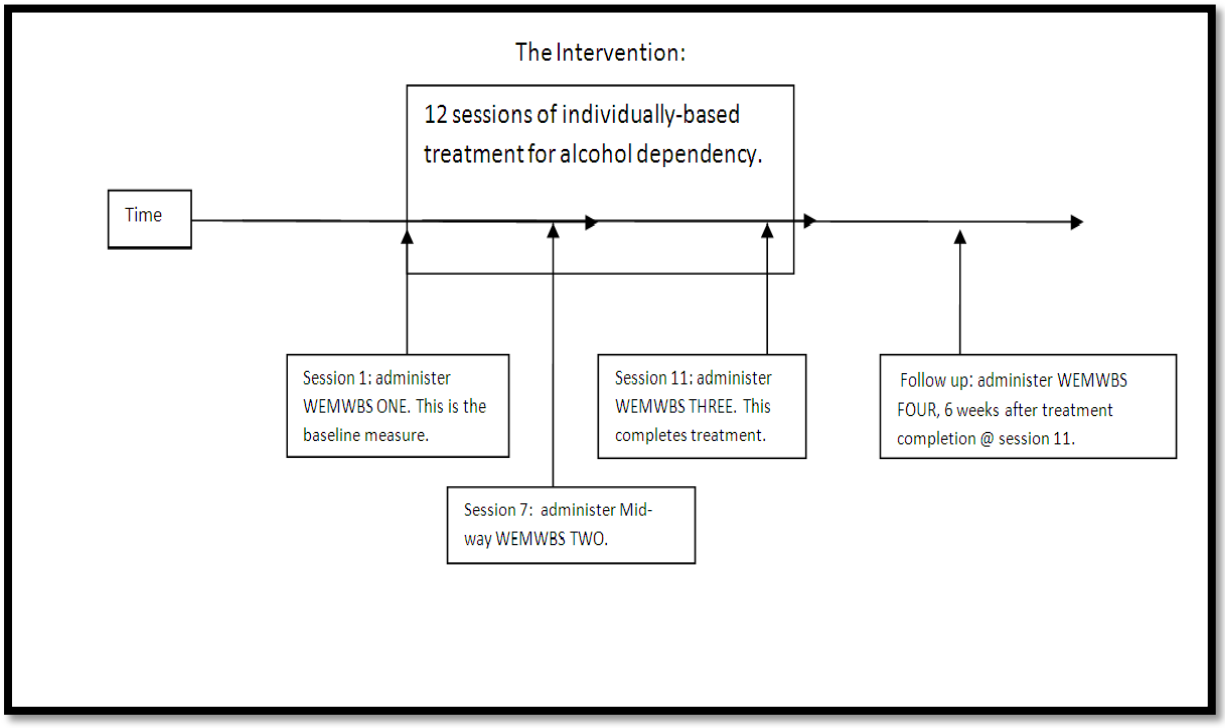
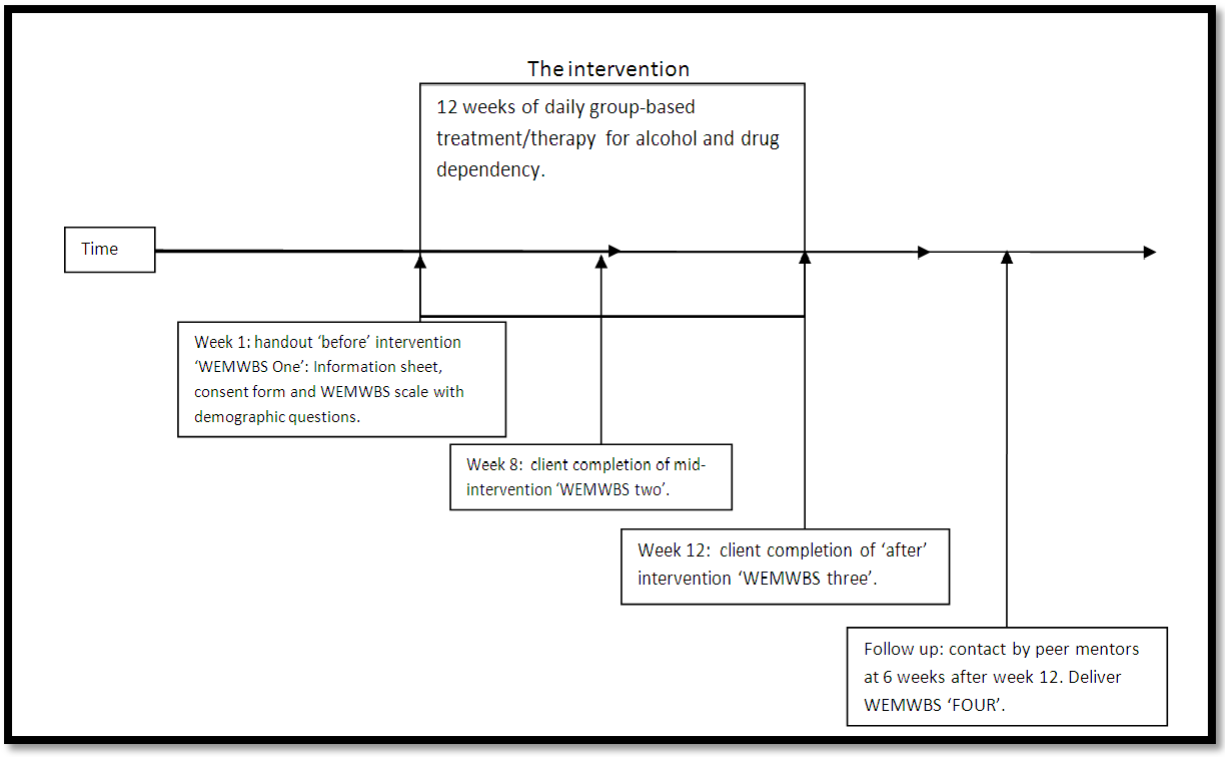


Figure: Structured Day Care mental wellbeing evaluation design



APPENDIX 8

Figure One Body One Life mental wellbeing evaluation design

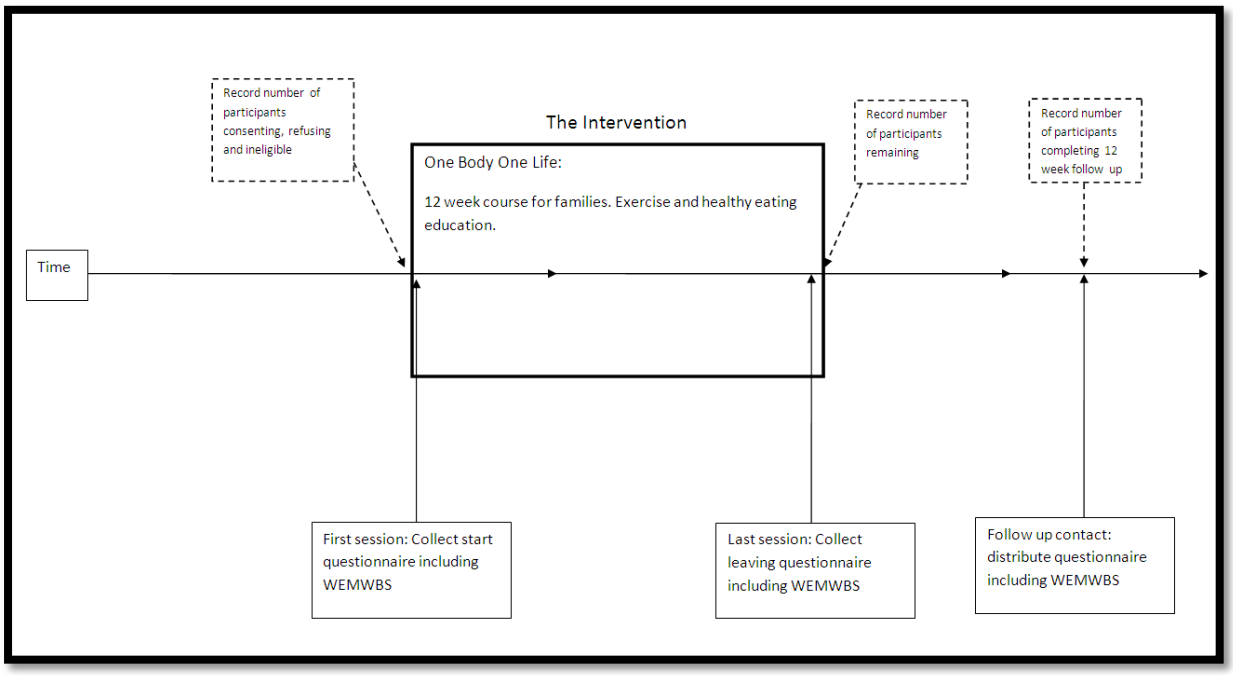
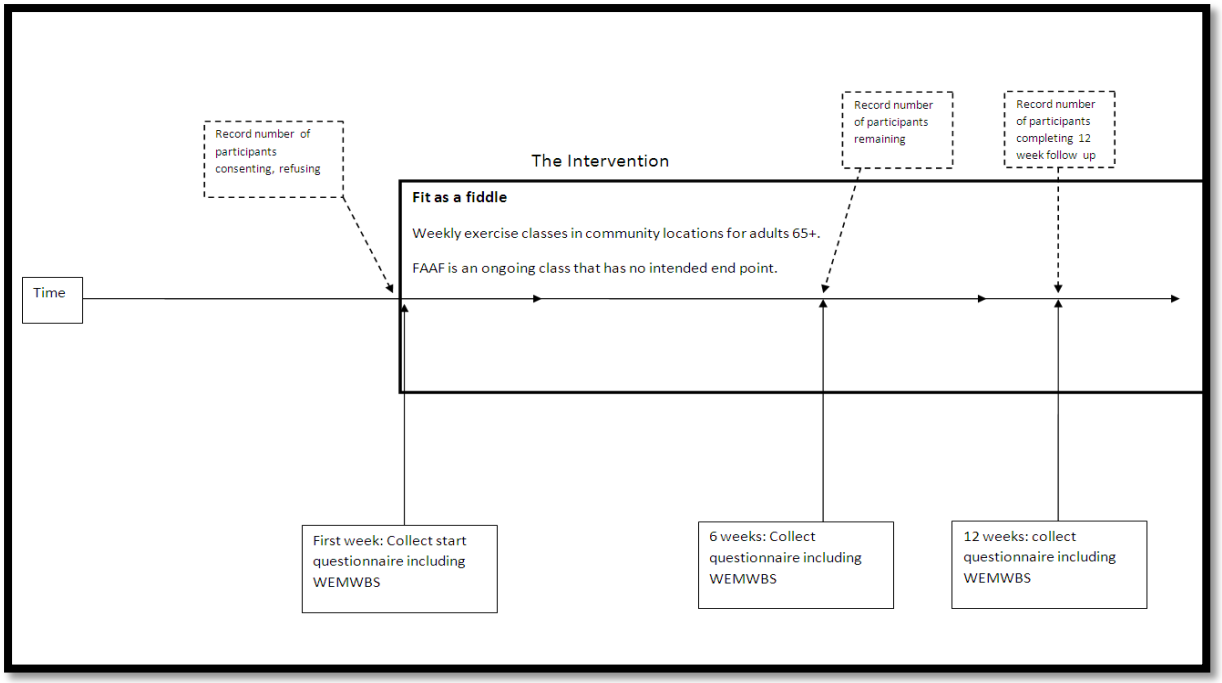
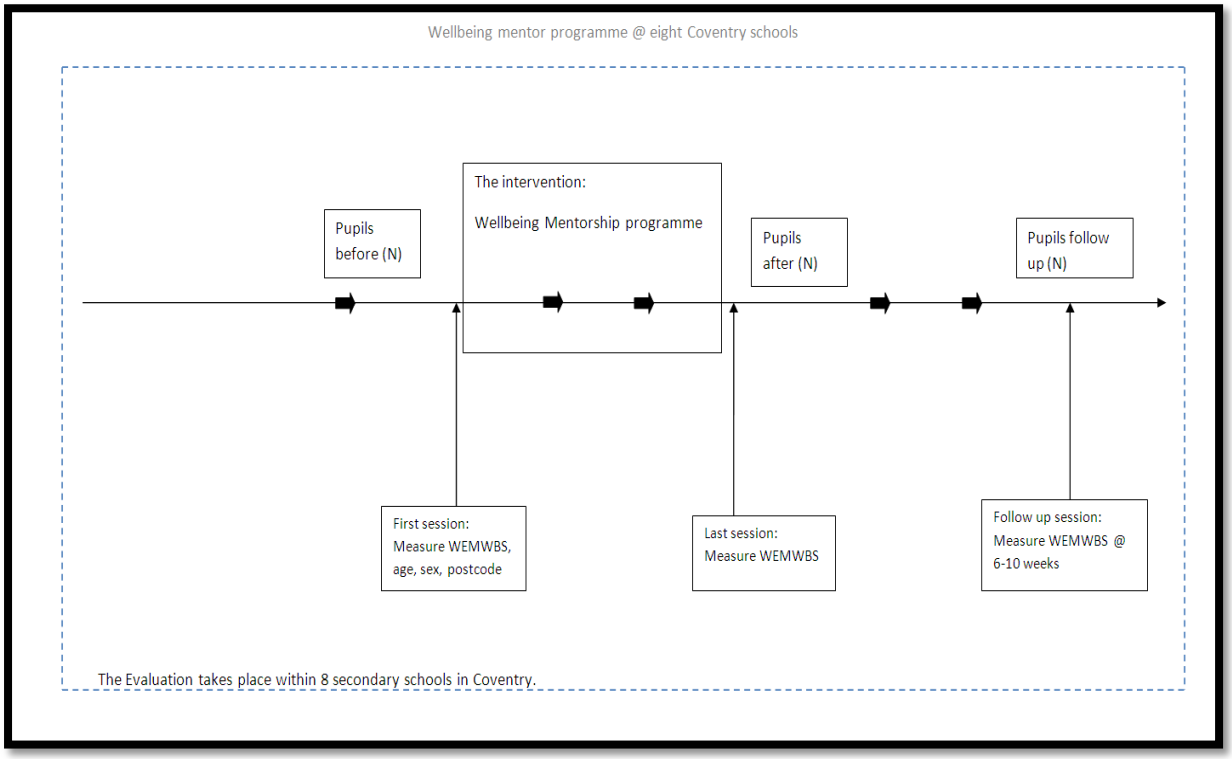


Figure Fit as a Fiddle mental wellbeing evaluation design



APPENDIX 8

Figure Wellbeing Mentors mental wellbeing evaluation design



APPENDIX 9

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts.

Please tick the box that best describes your experience of each over the last 2 weeks

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

COVENTRY PARTNERSHIP HOUSEHOLD SURVEY 2009

Interviewer Name _____ MSOA Code _____

Date _____ Time _____

INTRODUCTION: Good morning / afternoon. My name is ..... and I work for M·E·L Research. We have been commissioned by the **Coventry Partnership**, which includes the City Council, local Police, Primary Care Trust and other partners, to run an important survey on what you think of the quality of life in this neighbourhood and across Coventry as a whole. It's also about what needs doing to improve the area in future.

Can you spare a few minutes to take part?

Your response will be completely confidential and will not be used for any purpose other than this survey. Information from the survey will be used by the Partnership to develop services and help create a better quality of life for residents here.

X1 Can I confirm that you live at this address?

Yes ☐ continue
No ☐ end survey

IF THEY DO NOT LIVE AT THE ADDRESS ASK TO SPEAK TO SOMEONE WHO DOES

X2 Can I confirm that you are 16 or over?

Yes ☐ Continue
No ☐ end survey

IF NOT ADULT, ASK TO SPEAK TO SOMEONE IN THE HOUSE WHO IS 16 YRS+

RESPONDENT DETAILS (Please print)

TITLE: 1 MR 2 MRS 3 MISS 4 MS 5 DR

95 OTHER – **PLEASE SPECIFY:** _____

Name: _____

Address: _____

_____ **Postcode:** _____

Telephone Number: _____

Email Address: (Required if Yes at Q44) _____

Section 1 - Equalities and Communities

The first questions are about the **local neighbourhood** (this means the streets and houses within a few minutes walk from your home)

1. So firstly, can I ask how long you have lived in this neighbourhood? **CODE ONE ONLY**

Less than 1 year	1
1-2 years	2
3-5 years	3
6-10 years	4
11-15 years	5
16-20 years	6
More than 20 years	7

2. And what do you like MOST about the neighbourhood where you live? **WRITE IN VERBATIM**

3. And generally, how satisfied are you with THIS NEIGHBOURHOOD as a place to live? **SHOWCARD 1 and CODE ONE ONLY**

Very satisfied	1
Fairly satisfied	2
Neither satisfied nor dissatisfied	3
Slightly dissatisfied	4
Very dissatisfied	5
Don't know	6

4. What is your overall perception of how quality of life in this neighbourhood has changed over the last 2 years? **CODE ONE ONLY**

Improved	1
Stayed the same	2
Got worse	3
Don't know	4

5. In which of these places, if any, do you a) currently get information about public services in Coventry and b) would like to be able to get information about public services in Coventry in the future? **SHOWCARD 2 and CODE ALL THAT APPLY FOR a) and b)**

	Q5a) Current	Q5b) Future
Local Newspaper	☐ 1	☐ 1
Local radio station	☐ 2	☐ 2
Citivision or other magazine	☐ 3	☐ 3
Website	☐ 4	☐ 4
By telephone	☐ 5	☐ 5
By visiting services in person	☐ 6	☐ 6
Posters	☐ 7	☐ 7
Leaflets	☐ 8	☐ 8
Libraries	☐ 9	☐ 9
Other, please specify:	☐ 10	☐ 10
None of above	☐ 11	☐ 11

6. Do you agree or disagree that you can influence decisions affecting your local area? **CODE ONE ONLY. SHOWCARD 5**

Definitely agree	1
Tend to agree	2
Tend to disagree	3
Definitely disagree	4
Don't know	5

7. On this card (**SHOWCARD 3**) are a list of things people have said would make it easier for them to influence decisions. Which if any of these might make it easier for you to influence decisions in your local area? **CODE ALL THAT APPLY**

If I had more time	1
If the council got in touch with me and asked me	2
If I could give my opinion online/by email	3
If I knew what issues were being considered	4
If it was easy to contact my local councillor	5
If I knew who the local councillor was	6
If I could get involved in a group making decisions about issues affecting my local area/neighbourhood	7
Other, please specify:	8
Nothing	9
Don't know	10

8. Are you actively involved in working towards improving your neighbourhood? e.g. through Neighbourhood Watch, Residents or Tenants Association, Helping with Parent Teacher Association, volunteering at community building, etc. **CODE ONE ONLY**

Yes	1
No	2
Don't know	3

9. And generally, how hopeful do you feel about the future both for yourself and your household? **SHOWCARD 4 and CODE ONE ONLY**

Very hopeful	1
Hopeful	2
Neither hopeful nor worried	3
Worried	4
Very worried	5
Don't know	6

10. To what extent do you agree or disagree that this neighbourhood is a place where people from different backgrounds (i.e. different ethnic groups, faith groups, social backgrounds or countries of origin) get on well together? **SHOWCARD 5 and CODE ONE ONLY**

Definitely agree	1
Tend to agree	2
Tend to disagree	3
Definitely disagree	4
Don't know	5
Too few people live in the local area to judge	6

Section 2 - Housing and Environment

We would now like to ask you some questions about housing and the environment.

11. First of all, is your property….**READ OUT AND CODE ONE ONLY**

Owner Occupied	1
Rented from Whitefriars,	2
Rented from another Housing Association e.g. Midland Heart	3
Rented from Private Landlord	4
Shared Ownership	5
Other **PLEASE SPECIFY**	6

12. And how satisfied are you with the quality of your home? **SHOWCARD 6 and CODE ONE ONLY**

Very satisfied	1
Fairly satisfied	2
Neither satisfied nor dissatisfied	3
Slightly dissatisfied	4
Very dissatisfied	5
Don't know	6

13. How likely is it that you will want to move house in the next 4 or 5 years? **CODE ONE ONLY**

Very likely	1	Go to Q14
Fairly likely	2	Go to Q14
Not very likely	3	Go to Q16
Not at all likely	4	Go to Q16
Don't know	5	Go to Q16

ASK Q14 if VERY OR FAIRLY LIKELY- OTHERWISE GO TO Q16:

14. What are the main reasons for you possibly wanting to move? **SHOWCARD 7 AND CODE ALL THAT APPLY**

To move to a larger property	1
To move to a smaller property	2
To move to a more modern property	3
To move to a property more suited to my needs	4
To change the type of tenure (renting, owning etc)	5
To be nearer place of work or job opportunities	6
To be nearer to my preference for schools	7
To be nearer to shops and local facilities	8
To be nearer family or friends	9
To move away from an unsatisfactory situation	10
To move to a more desirable location	11
Other **PLEASE SPECIFY:**	12
No particular reason	13

15. And whereabouts would you most like to move to? **CODE ALL THAT APPLY**

Somewhere in this neighbourhood	1
Elsewhere in Coventry **[PROBE] Whereabouts?**	2
Somewhere outside Coventry **[PROBE] Whereabouts?**	3
Don't know	4

And now thinking about the environment….

16. Do you recycle any of the following? **READ OUT AND CODE ALL THAT APPLY. NOTE: INCLUDES CHARITABLE DONATIONS AND HOUSEHOLD CHARITY COLLECTIONS**

Paper and cardboard	1
Cans	2
Glass	3
Garden Waste	4
Textiles/Clothing/Shoes	5
None of the above	6

17. Please tell us if you have taken any of these environmental actions at home in the last 12 months? **SHOWCARD 8 and CODE ONE FOR EACH (a) to (e)**

	YES	**NO**
a) Reduced water use for instance by actions such as using a water saving device or dual flush in your toilet, not using a hose or garden sprinkler etc.?	1	2
b) Reduced energy use by actions such as not leaving your TV etc. on standby, turning off lights when leaving a room etc.?	1	2
c) Reduced the amount of waste you throw away by making compost out of kitchen and garden waste?	1	2
d) Encouraged wildlife in your garden by actions such as feeding birds, not using chemicals, planting wild flowers?	1	2
e) Grown your own fruit and vegetables Includes home garden, window boxes and allotments?	1	2

Section 3 - Community Safety

We would now like to ask you some questions about crime and community safety

18. How safe do you feel IN YOUR NEIGHBOURHOOD? **CODE ONE FOR EACH (a) to (b)**

	Very safe	**Safe**	**Not very safe**	**Very unsafe**	**Don't know**
a) Around your neighbourhood during the day	1	2	3	4	5
b) Around your neighbourhood at night	1	2	3	4	5

19. To what extent do you agree with the following statement *'Crime in my neighbourhood has increased over the last 12 months'?* **SHOWCARD 9 and CODE ONE ONLY**

Agree strongly	1
Agree slightly	2
Neither agree nor disagree	3
Disagree slightly	4
Disagree strongly	5
No opinion	6
Have not lived in the area for 12 months	7

20. How much of a problem, if at all, are the following in your NEIGHBOURHOOD? **SHOWCARD 10 and CODE ONE FOR EACH**

	Major problem	**Minor problem**	**Not a problem at all**	**Don't know**
Theft from vehicles	1	2	3	4
Theft of vehicles	1	2	3	4
Traffic Offences (e.g. speeding)	1	2	3	4
Problem/Noisy Neighbours	1	2	3	4
People hanging around	1	2	3	4
Rubbish or litter lying around	1	2	3	4
Vandalism to bus shelters or public telephones	1	2	3	4
Vandalism to other types of public property	1	2	3	4
Graffiti	1	2	3	4
Burglaries	1	2	3	4
Mugging	1	2	3	4

	Major problem	Minor problem	Not a problem at all	Don't know
People using or dealing drugs	1	2	3	4
People being drunk or rowdy in public places	1	2	3	4
Hate Crime (incident motivated by prejudice or hate. Reasons include age, faith, race, sexuality, disability)	1	2	3	4
Prostitution/Kerb Crawling	1	2	3	4
Mini Mopeds	1	2	3	4
Vandalism to private property	1	2	3	4
Dog fouling/barking	1	2	3	4
Other, specify:	1	2	3	4

Section 4 - Health and Well-being

I'd now like to move on to ask you some questions about health and well being.

21. First of all, would you say in general your health is…? **CODE ONE ONLY**

Very good	1
Good	2
Fair	3
Bad	4
Very bad	5

22. Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months? (include problems related to old age) **CODE ONE ONLY. NOTE: INCLUDES MENTAL HEALTH**

Yes limited a lot	1
Yes limited a little	2
No	3

23. How would you rate the quality of your sleep in the last month? **CODE ONE ONLY**

Poor	1
Average	2
Good	3
Not sure	4

24. And approximately, how long have you typically slept for per night during the last month (including naps during the day). **WRITE IN NUMBER OF HOURS PER DAY (ROUNDED NEAREST HOUR)**

Number of hours	

25. How many portions of fruit or vegetables would you say you eat in a typical day? **CODE ONE ONLY SHOWCARD 11**

A portion can be:

- Vegetables (fresh, raw, tinned, or frozen) 1 portion = 3 tablespoons
- Pulses, 1 portion = 3 tablespoons or more
- Salad, 1 portion = 1 bowl
- Fresh fruit, 1 portion = 1 medium apple
- Dried fruit (excluding cereal, cakes) 1 portion = 1 tablespoon or more
- Frozen or tinned fruit, 1 portion = 3 tablespoons
- Fruit juice (excluding cordials, fruit drinks, squashes), 1 portion = 1 small glass or more

Potatoes, rice or pasta are not included.

At least 5 portions	1
At least 3 portions, but less than 5 portions	2
At least one portion, but less than 3 portions	3
About one portion	4
Less than one portion	5
Don't know	6
Refused	7

26. Do you, or have you ever, smoked? **CODE ONE ONLY**

Yes, I currently smoke	1	Go to Q27, then Q29
Yes, but I no longer smoke	2	Go to Q28
No	3	Go to Q28

27. On average, how many cigarettes (including roll ups, cigars etc) do you smoke per day? **WRITE IN NUMBER OF CIGARETTES**

Number smoked per day	….

DO <u>NOT</u> ASK IF Q26=CURRENT SMOKER:

28. Are you currently exposed to passive smoking (second hand smoke) either at work or at home? **CODE ONE ONLY**

Yes	1
No	2
Don't know	3

29. How many days in a typical week do you usually drink alcohol ? **CODE ONE ONLY. NOTE: ALSO THINK ABOUT SPECIAL OCCASSIONS**

7 days	1	Go to Q30
5-6 days	2	
2 – 4 days	3	
Once per week	4	
Less than once per week	5	
Don't drink	6	Go to Q31

30. How many days in an average week, do you drink more than [WOMEN 2-3 units] [MEN 3-4 units] of alcohol? **CODE ONE ONLY. SHOWCARD 12 FOR UNIT DEFINITIONS**

- Normal strength beer, lager, cider (less than 6% ABV) = 1 pint equals 2 units; cans or bottles (size unknown) equals 1.5 units
- Strong beer, lager, cider (6% ABV or more) = 1 pint equals 4 units; cans or bottles (size unknown) equals 2.5 units
- Spirits and liqueurs glass (single measure) = 1 unit
- Sherry, martini, vermouth or other fortified wines (glass) = 1 unit
- Wine = small glass (125ml) equals 1.5 units; standard glass (175ml) equals 2 units; large glass (250ml) equals 3 units
- Alcopops/alcoholic soft drinks = small can or bottle equals 1.5 units

0 days	1
1 day	2
2 days	3
3 days	4
4 days	5
5 days	6
6 days	7
7 days	8
Refused	9
Don’t know	10

31. Can you tell us how frequently, if at all, you do the following? **SHOWCARD 13 AND CODE ALL THAT APPLY**

PHYSICAL ACTIVITY SHOULD BE OF MODERATE INTENSITY* - PROMPT - *FOR AT LEAST 30 MINUTES AT A TIME WHERE THE PARTICIPANT IS SLIGHTLY OUT OF BREATH BUT ABLE TO TALK

	At least 5 times a week	**3-4 times a week**	**Less than 3 times a week**	**Never**	**Don't know**
Take part in ANY physical activity* (e.g. brisk walking, cycling, housework, gardening, DIY, swimming, or sport)	1	2	3	4	5
Participate in any sport (e.g. playing football, netball, attending an aerobics class, visiting the gym, visit a sports/leisure centre, running, cycling, swimming etc)	1	2	3	4	5

32. I'm now going to hand you a sheet of paper with a number of statements about feelings and thoughts on it. Please tick the box that best describes your experience of each over the **last two weeks** and then hand the completed form back to the interviewer. **INTERVIEWER TO HAND OVER SELF COMPLETION QUESTION AND ASK RESPONDENT TO ANSWER QUESTIONS**

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Section 5 – Work and Training

33. Which of the following best describes your current economic status? **SHOWCARD 14 and CODE ONE ONLY**

In full time paid work	1
In part time paid work	2
Self employed	3
Taking part in a government training programme (e.g. trade and modern apprenticeships, work based learning for adults)	4
Registered unemployed/signing on for Job Seekers Allowance	5
Not registered unemployed but actively seeking work (i.e. have actively looked for work in the last 4 weeks)	6
At home/not seeking work – (looking after the home or family)	7
Long-term sick or disabled	8
Retired	9
In full-time education	10
Doing unpaid/voluntary work	11
Carer	12
Other **PLEASE SPECIFY:**	13

34. And what type of work do you do, or did you do most recently? **PROBE FULLY AND WRITE IN VERBATIM**

If Working: Probe For Job Function, Job Title And Level Of Skill. Obtain Any Qualifications Required For Job (E.G. Degree, Vocational Qualifications – Apprenticeship Etc). If Professional/Manager/Supervisor – Probe For No. Of Employees In Company And The Industry Of The Employer.
If Retired Or Unemployed, Obtain Information Regarding Previous Job Function.
If Housewife, Probe For Length Of Time As A Housewife And Obtain Information Regarding Previous Job Function As Appropriate

35. And how many adults living permanently in your household are in paid employment? **CODE ONE ONLY. NOTE: EITHER FULL OR PART TIME.**

None	1
1 person	2
2 people	3
3 people	4
4 or more people	5

36. And could you tell me, which of these is your **highest qualification? SHOWCARD 15 AND SINGLE CODE.** If the qualification is not listed, select the nearest equivalent. REFERS TO THE INDIVIDUAL RESPONDENT NOT THE HOUSEHOLD

Level 1: 1+ 'O' levels/CSE/GCSE (any grade), NVQ level 1, Foundation GNVQ	1
Level 2: 5+ 'O' levels, 5+ CSEs (grade 1), 5+ GCSEs (grade A - C), School Certificate, 1+ 'A' levels/'AS' levels, NVQ level 2, Intermediate GNVQ or equivalents.	2
Level 3: 2+ 'A' levels, 4+ 'AS' levels, Higher School Certificate, NVQ level 3, Advanced GNVQ or equivalents.	3
Level 4/5: First degree, Higher Degree, NVQ levels 4 - 5, HNC, HND, Qualified Teacher Status, Qualified Medical Doctor, Qualified Dentist, Qualified Nurse, Midwife, Health Visitor or equivalents.	4
Other qualifications/level unknown: Other qualifications (e.g. City and Guilds, RSA/OCR, BTEC/Edexcel), Other Professional Qualifications.	5
No qualifications: No academic, vocational or professional qualifications.	6

Section 6 - Transport and Accessibility

37. For each of the following types of journey, what is the **main form** of transport that you currently use? **SHOWCARD 16 and CODE ONE FOR EACH**

	Travel to work	**Education**	**Escorting children to school**
Car as Driver	1	1	1
Car as Passenger	2	2	2
Train	3	3	3
Bus	4	4	4
Motorbike	5	5	5
Bicycle	6	6	6
Taxi	7	7	7
Walking	8	8	8
Park & Ride	9	9	9
Not applicable	10	10	10

Section 7 - General Profile Questions

Finally we've got a few questions about you, these are just to make sure we have covered a representative cross section of Coventry people.

INTERVIEWER RECORD GENDER : 1 MALE 2 FEMALE

38. Firstly, can you please tell me your age last birthday? WRITE IN EXACT AGE AND THEN CODE. **IF REFUSE SHOWCARD 17 AND CODE**

_____ AGE IN YEARS

16 – 24	25 - 34	35 – 44	45 - 54	55 - 59	60 - 64	65 - 79	80+
1	2	3	4	5	6	7	8

39. What is your marital status? **SHOWCARD 18 and CODE ONE ONLY. INTERVIEWER NOTE: SELECT OPTION THAT BEST FITS**

Single (Never married and never registered a same-sex civil partnership)	1
Co-habiting	2
Married	3
Separated but still legally married	4
Divorced	5
Widowed	6
In a registered same-sex civil partnership	7
Separated but still legally in a same-sex civil partnership	8
Formerly in a same-sex civil partnership that is now legally dissolved	9
Surviving partner from a same-sex civil partnership	10

40. How many people living permanently in your household (including yourself) are in each of the following categories? (Write the number in each category, enter 0 if the answer to any category is nil). **WRITE NUMBER of PEOPLE FOR EACH. CHECK: CROSS REFERENCE AGAINST WORKERS IN HOUSEHOLD (Q35)**

	Number
1) Pre-school age (0-4 years)	
2) Primary school age (5-11 years)	
3) Secondary school age (12-16 years)	
4) Post school education (16/17 years)	
5) Adult (18-59 or 64)	
6) Retired (60 or 65+)	

41. Please can you tell me which of the numbered options on **SHOWCARD 19** best describes you? Please just read out the number on the showcard which best describes you. If you prefer not to say, I can record that instead. **CODE ONE ONLY**

Heterosexual	1
Gay man	2
Gay woman/lesbian	3
Bisexual	4
Other	5
Prefer not to say	6

42. And looking at the Showcard which number of the card best describes your religion? **SHOWCARD 20 AND CODE ONE ONLY**

No religion	1
Christian (including Church of England, Catholic, Protestant, and all other Christian denominations	2
Buddhist	3
Hindu	4
Jewish	5
Muslim	6
Sikh	7
Any Other religion **PLEASE SPECIFY:**	8

43. Which of the following groups do you consider you belong to? **SHOWCARD 21 and CODE WHETHER A,B,C, D and E AND THE NUMBER WITHIN THE GROUP**

A	WHITE
1	BRITISH
2	IRISH
3	ANY OTHER WHITE BACKGROUND **Please specify:**
B	MIXED
4	WHITE AND BLACK CARIBBEAN
5	WHITE AND BLACK AFRICAN
6	WHITE AND ASIAN
7	ANY OTHER MIXED BACKGROUND **Please specify:**
C	ASIAN OR ASIAN BRITISH
8	INDIAN
9	PAKISTANI
10	BANGLADESHI
11	ANY OTHER ASIAN BACKGROUND **Please specify:**
D	BLACK OR BLACK BRITISH
12	CARIBBEAN
13	AFRICAN
14	ANY OTHER BLACK BACKGROUND **Please specify:**
E	CHINESE OR OTHER ETHNIC GROUP
15	CHINESE
16	ANY OTHER ETHNIC GROUP **Please specify:**

44. Coventry Partnership may want to involve people more in the future, looking at ways of improving services and the quality of life for residents. Would you be interested in taking part in further consultation such as workshops, focus groups and other surveys like this? **CODE ONE ONLY**

By answering yes you are giving your permission for M·E·L Research to use your details to contact you about further research, and if necessary to pass your details onto the Coventry Partnership.

Yes (Make sure contact details are collected on front page of survey including telephone and/or email)	1
No	2

45. And finally, can I ask you what **three words** summarise Coventry as a place?

1	
2	
3	

MANY THANKS FOR YOUR ASSISTANCE IN COMPLETING THIS QUESTIONNAIRE

RESPONDENT TO COMPLETE: I CONFIRM THAT THIS INTERVIEW WAS CONDUCTED WITH MYSELF IN A PROPER MANNER AND THAT THE DETAILS HAVE BEEN RECORDED ACCURATELY. I HAVE RECEIVED INFORMATION ABOUT M.E.L AND THE SURVEY

Respondent to Sign:_____

Date:_____

To make sure we are doing our job properly, a number of people interviewed will be asked to confirm that an interview has taken place. May we have your telephone number so this can be checked? Your telephone number will not be used for any other purpose and you will not be contacted except for this reason.

Telephone number:_____

That's all the questions, thank you very much for completing this survey!

COVENTRY HOUSEHOLD SURVEY 2011

INTERVIEW DETAILS				
INTERVIEWER NAME :				
INT. I.D. NUMBER :				
INT. DATE				
INT. TIME: (USE 24 HOUR CLOCK) HRS MINS	INT. DAY (CIRCLE) MON TUES WED THURS FRI SAT SUN			

INTRODUCTION: Good morning / afternoon. My name is ..... and I work for BMG Research. We have been commissioned by the Coventry Partnership, which includes the City Council, local Police, Primary Care Trust, the Coventry Health Improvement Programme and other partners, to undertake an important survey about the quality of life in this neighbourhood and across Coventry as a whole. It's also about what needs doing to improve the area in the future.

RE-CONTACT SAMPLE: You may recall taking part in a similar survey last year.

To help us to analyse the data, the survey also asks some questions about you and your household.

All views are very important to the survey. May I please take 15 – 20 minutes of your time to ask you some questions? The questionnaire is entirely confidential and your personal details will not be passed on to any organisation without your permission. Information from the survey will be used by the Partnership to develop services and help create a better quality of life for residents here.

CHECK THAT THE RESPONDENT IS AGED OVER 16

INTERVIEWER RECORD GENDER : 1 MALE 2 FEMALE

1. Firstly, can you please tell me your age last birthday? **WRITE IN EXACT AGE AND THEN CODE. IF REFUSE SHOWCARD 1 AND CODE**

_____ **YEARS**

16 – 24	25 - 34	35 – 44	45 - 54	55 - 59	60 - 64	65 - 79	80+
1	2	3	4	5	6	7	8

LSOA: TO BE NOTED

APPENDIX 10.2

RESPONDENT DETAILS:

TITLE: 1 MR 2 MRS 3 MISS 4 MS 5 DR

95 OTHER – **PLEASE SPECIFY:**

SURNAME:

FORENAMES OR INITIALS:

ADDRESS ONE:

ADDRESS TWO:

ADDRESS THREE:

POSTAL TOWN:

POST CODE: - NB: THIS INFORMATION IS ESSENTIAL!

PHONE NUMBER – INCLUDE CODE!

EMAIL ADDRESS

Section 1 - Equalities and Communities

APPENDIX 10.2

The first questions are about the local neighbourhood (this means the streets and houses within a few minutes walk from your home)

1. So firstly, can I ask how long you have lived in this neighbourhood? **CODE ONE ONLY**

Less than 1 year	1
1-2 years	2
3-5 years	3
6-10 years	4
11-15 years	5
16-20 years	6
More than 20 years	7

2. And what do you like MOST about the neighbourhood where you live? **WRITE IN VERBATIM**

3. And generally, how satisfied are you with THIS NEIGHBOURHOOD as a place to live? **SHOWCARD 2 and CODE ONE ONLY**

Very satisfied	1
Fairly satisfied	2
Neither satisfied nor dissatisfied	3
Slightly dissatisfied	4
Very dissatisfied	5
Don't know	6

4. What is your overall perception of how quality of life in this neighbourhood has changed over the last 2 years? **CODE ONE ONLY**

Improved	1
Stayed the same	2
Got worse	3
Don't know	4

5. In which of these places, if any, do you a) currently get information about public services in Coventry and b) would like to be able to get information about public services in Coventry in the future? **SHOWCARD 3 and CODE ALL THAT APPLY FOR a) and b)**

	Q5a) Current	Q5b) Future
Local Newspaper	1	1
Local radio station	2	2
Citivision or other magazine	3	3
Website	4	4
By telephone	5	5
By visiting services in	6	6

person		
Posters	7	7
Leaflets	8	8
Libraries	9	9
Other, please specify:	10	10
None of above	11	11

6. Do you agree or disagree that you can influence decisions affecting your local area? **CODE ONE ONLY. SHOWCARD 4**

Definitely agree	1
Tend to agree	2
Tend to disagree	3
Definitely disagree	4
Don't know	5

7. On this card are a list of things people have said would make it easier for them to influence decisions. Which if any of these might make it easier for you to influence decisions in your local area? **SHOWCARD 5: CODE ALL THAT APPLY**

If I had more time	1
If the council got in touch with me and asked me	2
If I could give my opinion online/by email	3
If I knew what issues were being considered	4
If it was easy to contact my local councillor	5
If I knew who the local councillor was	6
If I could get involved in a group making decisions about issues affecting my local area/neighbourhood	7
Other, please specify:	8
Nothing	9
Don't know	10

8. Are you actively involved in working towards improving your neighbourhood? e.g. through Neighbourhood Watch, Residents or Tenants Association, Helping with Parent Teacher Association, volunteering at community building, etc. **CODE ONE ONLY**

Yes	1
No	2
Don't know	3

9. And generally, how hopeful do you feel about the future both for yourself and your household? **SHOWCARD 6 and CODE ONE ONLY**

Very hopeful	1
Hopeful	2
Neither hopeful nor worried	3
Worried	4
Very worried	5
Don't know	6

10. To what extent do you agree or disagree that this neighbourhood is a place where people from different backgrounds (i.e. different ethnic groups, faith groups, social backgrounds or countries of origin) get on well together? **SHOWCARD 7 and CODE ONE ONLY**

Definitely agree	1
Tend to agree	2
Tend to disagree	3
Definitely disagree	4
Don't know	5
Too few people live in the local area to judge	6

Section 2 - Housing and Environment

We would now like to ask you some questions about housing and the environment.

11. First of all, is your property….**READ OUT AND CODE ONE ONLY**

Owner Occupied	1
Rented from Whitefriars	2
Rented from another Housing Association e.g. Midland Heart	3
Rented from Private Landlord	4
Shared Ownership	5
Other **PLEASE SPECIFY**	6

12. And how satisfied are you with the quality of your home? **SHOWCARD 8 and CODE ONE ONLY**

Very satisfied	1
Fairly satisfied	2
Neither satisfied nor dissatisfied	3
Slightly dissatisfied	4
Very dissatisfied	5
Don't know	6

13. How likely is it that you will want to move house in the next 4 or 5 years? **CODE ONE ONLY**

Very likely	1	Go to Q14
Fairly likely	2	Go to Q14
Not very likely	3	Go to Q16
Not at all likely	4	Go to Q16
Don't know	5	Go to Q16

ASK Q14 if VERY OR FAIRLY LIKELY- OTHERWISE GO TO Q16:

14. What are the main reasons for you possibly wanting to move? **SHOWCARD 9 AND CODE ALL THAT APPLY**

To move to a larger property	1
To move to a smaller property	2
To move to a more modern property	3
To move to a property more suited to my needs	4
To change the type of tenure (renting, owning etc)	5
To be nearer place of work or job opportunities	6
To be nearer to my preference for schools	7
To be nearer to shops and local facilities	8
To be nearer family or friends	9
To move away from an unsatisfactory situation	10
To move to a more desirable location	11
Other **PLEASE SPECIFY:**	12
No particular reason	13

15. And whereabouts would you most like to move to? **CODE ALL THAT APPLY**

Somewhere in this neighbourhood	1
Elsewhere in Coventry [PROBE] Whereabouts?	2
Somewhere outside Coventry [PROBE] Whereabouts?	3
Don't know	4

And now thinking about the environment….

16. Do you recycle any of the following? **READ OUT AND CODE ALL THAT APPLY. NOTE: INCLUDES CHARITABLE DONATIONS AND HOUSEHOLD CHARITY COLLECTIONS**

Paper and cardboard	1
Cans	2
Glass	3
Garden Waste	4
Textiles/Clothing/Shoes	5
None of the above	6

17. Please tell us if you have taken any of these environmental actions at home in the last 12 months? **SHOWCARD 10 and CODE ONE FOR EACH (a) to (e)**

	YES	**NO**
a) Reduced water use for instance by actions such as using a water saving device or dual flush in your toilet, not using a hose or garden sprinkler etc.?	1	2
b) Reduced energy use by actions such as not leaving your TV etc. on standby, turning off lights when leaving a room etc.?	1	2
c) Reduced the amount of waste you throw away by making compost out of kitchen and garden waste?	1	2
d) Encouraged wildlife in your garden by actions such as feeding birds, not using chemicals, planting wild flowers?	1	2
e) Grown your own fruit and vegetables Includes home garden, window boxes and allotments?	1	2

Section 3 - Community Safety

We would now like to ask you some questions about crime and community safety

18. How safe do you feel IN YOUR NEIGHBOURHOOD**? CODE ONE FOR EACH (a) to (b)**

	Very safe	**Safe**	**Not very safe**	**Very unsafe**	**Don't know**
a) Around your neighbourhood during the day	1	2	3	4	5
b) Around your neighbourhood at night	1	2	3	4	5

19. To what extent do you agree with the following statement 'Crime in my neighbourhood has increased over the last 12 months'? **SHOWCARD 11 and CODE ONE ONLY**

Agree strongly	1
Agree slightly	2
Neither agree nor disagree	3
Disagree slightly	4
Disagree strongly	5
No opinion	6
Have not lived in the area for 12 months	7

20. How much of a problem, if at all, are the following in your NEIGHBOURHOOD? **SHOWCARD 12 and CODE ONE FOR EACH**

	Major problem	**Minor problem**	**Not a problem at all**	**Don't know**
Theft from vehicles	1	2	3	4
Theft of vehicles	1	2	3	4
Traffic Offences (e.g. speeding)	1	2	3	4
Problem/Noisy Neighbours	1	2	3	4
People hanging around	1	2	3	4
Rubbish or litter lying around	1	2	3	4
Vandalism to bus shelters or public telephones	1	2	3	4
Vandalism to other types of public property	1	2	3	4
Graffiti	1	2	3	4
Burglaries	1	2	3	4
Mugging	1	2	3	4
People using or dealing drugs	1	2	3	4
People being drunk or rowdy in public places	1	2	3	4
Hate Crime (incident motivated by prejudice or hate. Reasons include age, faith, race, sexuality, disability)	1	2	3	4
Prostitution/Kerb Crawling	1	2	3	4
Mini Mopeds	1	2	3	4
Vandalism to private property	1	2	3	4
Dog fouling/barking	1	2	3	4
Other, **PLEASE SPECIFY**	1	2	3	4

Section 4 - Health and Well-being

I'd now like to move on to ask you some questions about health and well being.

21. First of all, would you say in general your health is…? **CODE ONE ONLY**

Very good	1
Good	2
Fair	3
Bad	4
Very bad	5

22. Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months? (include problems related to old age) **CODE ONE ONLY. NOTE: INCLUDES MENTAL HEALTH**

Yes, limited a lot	1
Yes, limited a little	2
Not at all	3

WHERE YES IN Q22:

23. How would you describe your impairment?

Physical	1
Sensory	2
Learning	3
Mental	4
Other	5

ASK ALL:

The following questions are designed to be asked of everyone to find out how physically active and healthy people who live in the Coventry area are with regard to people living elsewhere.

24. Please tell which of these statements best describes your level of mobility at the moment? **SHOWCARD 13 AND CODE ONE ONLY**

I have no problems in walking about	1
I have some problems in walking about	2
I am confined to bed	3

25. Please tell which of these statements best describes your level of ability with regard to self-care? **SHOWCARD 14 AND CODE ONE ONLY**

I have no problems with self-care	1
I have some problems washing or dressing myself	2
I am unable to wash or dress myself	3

26. Which of these statements best describes the extent to which you are able to carry out usual activities such as work, study, housework, family or leisure activities? **SHOWCARD 15 AND CODE ONE ONLY**

I have no problems with performing my usual activities	1
I have some problems with performing my usual activities	2
I am unable to perform my usual activities	3

27. Which of these statements best describes the level of pain or discomfort you may be experiencing? **SHOWCARD 16 AND CODE ONE ONLY**

I have no pain or discomfort	1
I have moderate pain or discomfort	2
I have extreme pain or discomfort	3

28. And which of these statements best describes the level of anxiety or depression you may be experiencing? **SHOWCARD 17 AND CODE ONE ONLY**

I am not anxious or depressed	1
I am moderately anxious or depressed	2
I am extremely anxious or depressed	3

29. In order to help gauge the state of health of people in the local area, compared with those in other areas, I would like you to indicate how good or bad your own health is today, in your opinion? For this we are using a scale of 0 to 100 and I would like you to indicate the point on the scale which best reflects how good or bad your health state is today. **SHOWCARD 18 (SCALE OF 0 – WORST IMAGINABLE HEALTH STATE TO 100 – BEST IMAGINABLE HEALTH STATE) WRITE IN NUMERICAL VALUE GIVEN**

30. How would you rate the quality of your sleep in the last month? **CODE ONE ONLY**

Poor	1
Average	2
Good	3
Not sure	4

31. And approximately, how long have you typically slept for per night during the last month (including naps during the day). **WRITE IN NUMBER OF HOURS PER DAY (ROUNDED NEAREST HOUR)**

Number of hours

32. How many portions of fruit or vegetables would you say you eat in a typical day? **CODE ONE ONLY SHOWCARD 19**

A portion can be:

- Vegetables (fresh, raw, tinned, or frozen) 1 portion = 3 tablespoons
- Pulses, 1 portion = 3 tablespoons or more
- Salad, 1 portion = 1 bowl
- Fresh fruit, 1 portion = 1 medium apple
- Dried fruit (excluding cereal, cakes) 1 portion = 1 tablespoon or more
- Frozen or tinned fruit, 1 portion = 3 tablespoons
- Fruit juice (excluding cordials, fruit drinks, squashes), 1 portion = 1 small glass or more

Potatoes, rice or pasta are not included.

At least 5 portions	1
At least 3 portions, but less than 5 portions	2
At least one portion, but less than 3 portions	3
About one portion	4
Less than one portion	5
Don't know	6
Refused	7

33. Do you, or have you ever, smoked? **CODE ONE ONLY**

Yes, I currently smoke	1	Go to Q34
Yes, but I no longer smoke	2	Go to Q35
No	3	Go to Q35

WHERE SMOKE (Q33/1):

34. On average, how many cigarettes (including roll ups, cigars etc) do you smoke per day? **WRITE IN NUMBER OF CIGARETTES**

Number smoked per day	

DO NOT ASK IF Q33=CURRENT SMOKER:

35. Are you currently exposed to passive smoking (second hand smoke) either at work or at home? **CODE ONE ONLY**

Yes	1
No	2
Don't know	3

36. How many days in a typical week do you usually drink alcohol? **CODE ONE ONLY. NOTE: ALSO THINK ABOUT SPECIAL OCCASIONS**

7 days	1	Go to Q37
5-6 days	2	
2-4 days	3	
Once per week	4	
Less than once per week	5	
Don't drink	6	Go to Q38

37. How many days in an average week, do you drink more than [WOMEN 2-3 units] [MEN 3-4 units] of alcohol? **CODE ONE ONLY. SHOWCARD 20 FOR UNIT DEFINITIONS**

- Normal strength beer, lager, cider (less than 6% ABV) = 1 pint equals 2 units; cans or bottles (size unknown) equals 1.5 units.
- Strong beer, lager, cider (6% ABV or more) = 1 pint equals 4 units; cans or bottles
- (size unknown) equals 2.5 units .
- Spirits and liqueurs glass (single measure) = 1 unit
- Sherry, martini, vermouth or other fortified wines (glass) = 1 unit
- Wine = small glass (125ml) equals 1.5 units; standard glass (175ml) equals 2 units;
- large glass (250ml) equals 3 units
- Alcopops/alcoholic soft drinks = small can or bottle equals 1.5 units

0 days	1
1 day	2
2 days	3
3 days	4
4 days	5
5 days	6
6 days	7
7 days	8
Refused	9
Don’t know	10

38. Can you tell us how frequently, if at all, you do the following? **SHOWCARD 21 AND CODE ALL THAT APPLY**

PHYSICAL ACTIVITY SHOULD BE OF MODERATE INTENSITY* - PROMPT - *FOR AT LEAST 30 MINUTES AT A TIME WHERE THE PARTICIPANT IS SLIGHTLY OUT OF BREATH BUT ABLE TO TALK

	At least 5 times a week	3-4 times a week	Less than 3 times a week	Never	Don't know
Take part in ANY physical activity* (e.g. brisk walking, cycling, housework, gardening, DIY, swimming, or sport)	1	2	3	4	5
Participate in any sport (e.g. playing football, netball, attending an aerobics class, visiting the gym, visit a sports/leisure centre, running, cycling, swimming etc)	1	2	3	4	5

I am now going to be asking you to respond to statements about your thoughts and feelings over the past two weeks. The aim of this is to find out about local people's feelings in general. Your responses will not be linked back to you, remaining anonymous when the survey findings are reported. I'd like you to read out the letter relating to each statement and then tell me how often each applies to you. (If necessary: On my screen I only have the statements listed by their letter, not the statement written out in full.)

39. Please tell me which best describes your experience of each statement over the last two weeks…. **SHOWCARD 22 AND CODE ONE ONLY FOR EACH**

		None of the time	Rarely	Some of the time	Often	All of the time
A	I've been feeling optimistic about the future	1	2	3	4	5
B	I've been feeling useful	1	2	3	4	5
C	I've been feeling relaxed	1	2	3	4	5
D	I've been feeling interested in other people	1	2	3	4	5
E	I've had energy to spare	1	2	3	4	5
F	I've been dealing with problems well	1	2	3	4	5
G	I've been thinking clearly	1	2	3	4	5
H	I've been feeling good about myself	1	2	3	4	5
I	I've been feeling close to other people	1	2	3	4	5
J	I've been feeling confident	1	2	3	4	5
K	I've been able to make up my own mind about things	1	2	3	4	5
L	I've been feeling loved	1	2	3	4	5

		None of the time	Rarely	Some of the time	Often	All of the time
M	I've been interested in new things	1	2	3	4	5
N	I've been feeling cheerful	1	2	3	4	5

40. All things considered, how satisfied are you with your life as a whole nowadays? On a scale of 0-10, where 0 is extremely dissatisfied and 10 is extremely satisfied. **CODE ONE ONLY**

										DK/refused
1	2	3	4	5	6	7	8	9	10	11

Section 5 – Work and Training

41. Which of the following best describes your current economic status? **SHOWCARD 23 and CODE ONE ONLY**

In full time paid work	1
In part time paid work	2
Self employed	3
Taking part in a government training programme (e.g. trade and modern apprenticeships, work based learning for adults)	4
Registered unemployed/signing on for Job Seekers Allowance	5
Not registered unemployed but actively seeking work (i.e. have actively looked for work in the last 4 weeks)	6
At home/not seeking work – (looking after the home or family)	7
Long-term sick or disabled	8
Retired	9
In full-time education	10
Doing unpaid/voluntary work	11
Carer	12
Other **PLEASE SPECIFY:**	13

42. And what type of work do you do, or did you do most recently? **PROBE FULLY AND WRITE IN VERBATIM**

If Working: Probe For Job Function, Job Title, Job Grade And Level Of Skill. Obtain Any Qualifications Required For Job (E.G. Degree, Vocational Qualifications – Apprenticeship Etc). If Owner/Professional/Manager/Supervisor – Probe For No. Of Employees In Company And The Industry Of The Employer.
If Retired ask if they have an occupational pension and find out what they used to do for work. If Unemployed, Obtain Information Regarding Previous Job Function.
If Housewife, Probe For Length Of Time As A Housewife And Obtain Information Regarding Previous Job Function As Appropriate

43. And how many adults living permanently in your household are in paid employment? **CODE ONE ONLY. NOTE: EITHER FULL OR PART TIME.**

None	1
1 person	2
2 people	3
3 people	4
4 or more people	5

44. And could you tell me, which of these is your **highest qualification? SHOWCARD 24 AND SINGLE CODE**. If the qualification is not listed, select the nearest equivalent. REFERS TO THE INDIVIDUAL RESPONDENT NOT THE HOUSEHOLD

Level 1: 1+ 'O' levels/CSE/GCSE (any grade), NVQ level 1, Foundation GNVQ	1
Level 2: 5+ 'O' levels, 5+ CSEs (grade 1), 5+ GCSEs (grade A - C), School Certificate, 1+ 'A' levels/'AS' levels, NVQ level 2, Intermediate GNVQ or equivalents	2
Level 3: 2+ 'A' levels, 4+ 'AS' levels, Higher School Certificate, NVQ level 3, Advanced GNVQ or equivalents.	3
Level 4/5: First degree, Higher Degree, NVQ levels 4 - 5, HNC, HND, Qualified Teacher Status, Qualified Medical Doctor, Qualified Dentist, Qualified Nurse, Midwife, Health Visitor or equivalents.	4
Other qualifications/level unknown: Other qualifications (e.g. City and Guilds, RSA/OCR, BTEC/Edexcel), Other Professional Qualifications.	5
No qualifications: No academic, vocational or professional qualifications.	6

Section 6 - Transport and Accessibility

45. For each of the following types of journey, what is the main form of transport that you currently use? **SHOWCARD 25 and CODE ONE FOR EACH**

	Travel to work	**Education**	**Escorting children to school**
Car as Driver	1	1	1
Car as Passenger	2	2	2
Train	3	3	3
Bus	4	4	4
Motorbike	5	5	5
Bicycle	6	6	6
Taxi	7	7	7
Walking	8	8	8
Park & Ride	9	9	9
Not applicable	10	10	10

Section 7 - General Profile Questions

Finally we've got a few questions about you; these are just to make sure we have covered a representative cross section of Coventry people.

46. What is your marital status? **SHOWCARD 26 and CODE ONE ONLY. INTERVIEWER NOTE: SELECT OPTION THAT BEST FITS**

Single (Never married and never registered a same-sex civil partnership)	1
Co-habiting	2
Married	3
Separated but still legally married	4
Divorced	5
Widowed	6
In a registered same-sex civil partnership	7
Separated but still legally in a same-sex civil partnership	8
Formerly in a same-sex civil partnership that is now legally dissolved	9
Surviving partner from a same-sex civil partnership	10

47. How many people living permanently in your household (including yourself) are in each of the following categories? (Write the number in each category, enter 0 if the answer to any category is nil). **WRITE NUMBER of PEOPLE FOR EACH. CHECK: CROSS REFERENCE 4)-6) AGAINST WORKERS IN HOUSEHOLD (Q43)**

	Number
1) Pre-school age (0-4 years)	
2) Primary school age (5-11 years)	
3) Secondary school age (12-16 years)	
4) Post school education (16/17 years)	
5) Adult (18-59 or 64)	
6) Retired (60 or 65+)	

48. Please can you tell me which of the numbered options on **SHOWCARD 27** best describes you? Please just read out the number on the showcard which best describes you. If you prefer not to say, I can record that instead. **CODE ONE ONLY**

Heterosexual	1
Gay man	2
Gay woman/lesbian	3
Bisexual	4
Other	5
Prefer not to say	6

49. And looking at the card which number best describes your religion? **SHOWCARD 28 AND CODE ONE ONLY**

No religion	1
Christian (including Church of England, Catholic, Protestant, and all other Christian denominations	2
Buddhist	3
Hindu	4
Jewish	5
Muslim	6
Sikh	7
Any Other religion **PLEASE SPECIFY**:	8

50. Which of the following groups do you consider you belong to? **SHOWCARD 29 and CODE WHETHER A, B, C, D and E AND THE NUMBER WITHIN THE GROUP**

A	WHITE
1	BRITISH
2	IRISH
3	ANY OTHER WHITE BACKGROUND Please specify:
B	MIXED
4	WHITE AND BLACK CARIBBEAN
5	WHITE AND BLACK AFRICAN
6	WHITE AND ASIAN
7	ANY OTHER MIXED BACKGROUND **Please specify:**
C	ASIAN OR ASIAN BRITISH
8	INDIAN
9	PAKISTANI
10	BANGLADESHI
11	ANY OTHER ASIAN BACKGROUND Please specify:
D	BLACK OR BLACK BRITISH
12	CARIBBEAN
13	AFRICAN
14	ANY OTHER BLACK BACKGROUND Please specify:
E	CHINESE OR OTHER ETHNIC GROUP
15	CHINESE
16	ANY OTHER ETHNIC GROUP Please specify:

51. And finally, can I ask you what **three words** summarise Coventry as a place?

1	
2	
3	

52. The Coventry Partnership may want to involve people more in the future, looking at ways of improving services and the quality of life for residents. Would you be interested in taking part in further consultation such as workshops, focus groups and other surveys like this? **CODE ONE ONLY**

Yes (make sure contact details are collected on front page of survey)	1
No	2

WHERE YES:

53. Thank you for agreeing to take part in further consultation. Your details will be passed to the Coventry Partnership. As well as taking part in other consultation, you may be approached to take part in a follow-up survey to this one next year. Your participation in the follow up survey would also be anonymous and your responses would remain strictly confidential. Can you confirm that you are happy to take part in a follow-up survey to this one in approximately 12 months time?

Yes	1
No	2

MANY THANKS FOR YOUR ASSISTANCE IN COMPLETING THE QUESTIONAIRE

RESPONDENT TO COMPLETE: I CONFIRM THAT THIS INTERVIEW WAS CONDUCTED WITH MYSELF IN A PROPER MANNER AND THAT THE DETAILS HAVE BEE RECORDED ACCURATLEY. I HAVE RECEIVED INFORMATION ABOUT BMG AND THE SURVEY

Respondent to sign:----------

Date:----------

To make sure that we are doing our job properly, a number of people interviewed will be asked to confirm that an interview has taken place. May we have your telephone number so this can be checked? Your telephone number will not be used for any other purpose and you will not be contacted except for this reason.

Telephone number: ----------

THAT'S ALL THE QUESTIONS, THANK YOU VERY MUCH FOR COMPLETING THE SURVEY

PR 11213
Coventry Household Survey 2012

Stamp No. (office use only)

Interviewer details:

Interviewer Name	
Date of Interview	
Time	
MSOA	

Good morning / afternoon. My name is ..... and I work for M·E·L Research. We have been commissioned by the Coventry Partnership, which includes the City Council, local Police, Primary Care Trust, the Coventry Health Improvement Programme and other partners, to undertake an important survey about wellbeing in this neighbourhood and across Coventry as a whole. It's also about what needs doing to improve the area in the future.

To help us to analyse the data, the survey also asks some questions about you and your household.

All views are very important to the survey, can you spare some time to take part?

The questionnaire is entirely confidential and your personal details will not be passed on to any organisation without your permission. Information from the survey will be used by the Partnership to develop services and help create a better quality of life for residents here.

Can I confirm that you live at this address?

- ☐ Yes - Continue
- ☐ No - ask to speak to someone who does

Can I confirm that you are 16 or over?

- ☐ Yes - Continue
- ☐ No - Ask to speak to someone who is 16 years or over

Respondent details:

Title	
Name	
Address.....	
Postcode	
Telephone Number	
Email address	

PART 1- NEIGHBOURHOODS AND COMMUNITIES

Part 1 is about neighbourhoods and communities. There are four sections in Part 1 covering communities, housing, community safety and transport.

Section 1 - Equalities and Communities

The first questions are about the local neighbourhood (this means the streets and houses within a few minutes' walk from your home)

Q1. So firstly, how long have you lived in this neighbourhood? CODE ONE ONLY

☐ Less than 1 year	☐ 3-5 years	☐ 11-20 years
☐ 1-2 years	☐ 6-10 years	☐ Over 20 years

Q2. And what do you like MOST about the neighbourhood where you live? WRITE IN VERBATIM

Q3. And generally, how satisfied are you with THIS NEIGHBOURHOOD as a place to live? SHOWCARD A and CODE ONE ONLY

☐ Very satisfied	☐ Fairly dissatisfied
☐ Fairly satisfied	☐ Very dissatisfied
☐ Neither satisfied nor dissatisfied	☐ Don't know

Q4. What is your overall perception of how quality of life in this neighbourhood has changed over the last 2 years? CODE ONE ONLY

☐ Improved	☐ Stayed the same	☐ Got worse	☐ Don't know

Q5. Do you agree or disagree that you can influence decisions affecting your local area? CODE ONE ONLY. SHOWCARD B

☐ Definitely agree	☐ Tend to disagree	☐ Don't know
☐ Tend to agree	☐ Definitely disagree	

Q6. Are you actively involved in working towards improving your neighbourhood? e.g. through Neighbourhood Watch, Residents or Tenants Association, Helping with Parent Teacher Association, volunteering at community building, etc. CODE ONE ONLY

☐ Yes	☐ No	☐ Don't know

Q7. To what extent do you agree or disagree that this neighbourhood is a place where people from different backgrounds (i.e. different ethnic groups, faith groups, social backgrounds or countries of origin) get on well together? SHOWCARD C and CODE ONE ONLY

- ☐ Definitely agree
- ☐ Tend to agree
- ☐ Tend to disagree
- ☐ Definitely disagree
- ☐ Don't know (Do not prompt)
- ☐ Too few people live in the local area to judge

Q8. Whether at home or elsewhere, how often do you meet friends or relatives who are not living with you? SHOWCARD D and CODE ONE ONLY

- ☐ On most days
- ☐ Once or twice a week
- ☐ Once or twice a month
- ☐ Less often than once a month
- ☐ Never

Q9. I am going to read a list of situations where people might need help. For each one, could you tell me if you would ask anyone for help? CODE ONE ONLY FOR EACH a) to d)

	Yes	No	Don't know	It depends
a) You need a lift to be somewhere urgently	☐	☐	☐	☐
b) You are ill in bed and need help at home	☐	☐	☐	☐
c) You are in financial difficulty and need to borrow £100	☐	☐	☐	☐
d) You have a serious personal crisis and need someone to turn to for comfort and support	☐	☐	☐	☐

Section 2: Housing and Environment

We would now like to ask you some questions about housing and the environment.

Q10. First of all, is your property….READ OUT AND CODE ONE ONLY

- ☐ Owner occupied
- ☐ Rented from Whitefriars
- ☐ Rented from another Housing Association e.g. Midland Heart
- ☐ Rented from private landlord
- ☐ Shared ownership
- ☐ Other, please specify below

Q10. Other

Q11. And how satisfied are you with the quality of your home? SHOWCARD E and CODE ONE ONLY

- ☐ Very satisfied
- ☐ Fairly satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Fairly dissatisfied
- ☐ Very dissatisfied
- ☐ Don't know (DO NOT PROMPT)

Q12. How likely is it that you will want to move house in the next 4 or 5 years? CODE ONE ONLY

☐ Very likely	Go to Q13	☐ Very unlikely	Go to Q15
☐ Fairly likely	Go to Q13	☐ Not sure/Don't know	Go to Q15
☐ Fairly unlikely	Go to Q15		

Q13. What are the main reasons for you possibly wanting to move? SHOWCARD F AND CODE ALL THAT APPLY

- ☐ To move to a larger property
- ☐ To move to a smaller property
- ☐ To move to a more modern property
- ☐ To move to a property more suited to my needs
- ☐ To change the type of tenure (renting, owning etc)
- ☐ To be nearer place of work or job opportunities
- ☐ To be nearer to my preference for schools
- ☐ To be nearer to shops and local facilities
- ☐ To be nearer family or friends
- ☐ To move away from an unsatisfactory situation
- ☐ To move to a more desirable location
- ☐ Other PLEASE SPECIFY BELOW
- ☐ No particular reason

Q13. Other

Q14. And whereabouts would you like to move to? CODE ALL THAT APPLY

- ☐ Somewhere in this neighbourhood
- ☐ Elsewhere in Coventry [PROBE] Whereabouts?_____
- ☐ Somewhere outside Coventry [PROBE] Whereabouts?_____
- ☐ Don’t know

Q14. Elsewhere in Coventry

Q14. Somewhere outside Coventry

Q15. And now thinking about the environment, how satisfied are you with standards of the following in your NEIGHBOURHOOD? SHOWCARD G AND CODE ONE FOR EACH for a) to e)

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don't know
a) Quality of parks & open spaces (how well they are maintained and looked after)	☐	☐	☐	☐	☐	☐
b) Access to parks and open spaces (how easy they are to get to and use)	☐	☐	☐	☐	☐	☐
c) Street cleanliness (e.g. litter and graffiti)	☐	☐	☐	☐	☐	☐
d) Road maintenance and repairs	☐	☐	☐	☐	☐	☐
e) Street lighting	☐	☐	☐	☐	☐	☐

Section 3 - Community Safety

We would now like to ask you some questions about crime and community safety

Q16. How safe do you feel IN YOUR NEIGHBOURHOOD? CODE ONE FOR EACH (a) to (b) SHOWCARD H

	Very safe	Fairly safe	A bit unsafe	Very unsafe	Don't know
a) During the day	☐	☐	☐	☐	☐
b) At night	☐	☐	☐	☐	☐

Q17. To what extent do you agree with the following statement 'Crime in my neighbourhood has increased over the last 12 months'? SHOWCARD I and CODE ONE ONLY

- ☐ Agree strongly
- ☐ Agree slightly
- ☐ Neither agree nor disagree
- ☐ Disagree slightly
- ☐ Disagree strongly
- ☐ No opinion
- ☐ Have not lived here for 12 months

Section 4: Transport and Accessibility

Q18. For each of the following types of journey a) to c), what is the main form of transport that you currently use? CODE ONE FOR EACH for a) to c)

	Car as driver	Car as pass-enger	Train	Bus	Motor-bike	Bicycle	Taxi	Walking	Park and Ride	N/A
a) Travel to work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Education	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c) Escorting children to school	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

PART 2: HEALTH, WELL-BEING AND LIFESTYLES

We are now moving on to Part 2 of the questionnaire, in this section we will ask you questions about health, well-being and lifestyles.

Section 5 - Health and Well-being

I'd now like to move on to ask you some questions about your health.

Q19. First of all, would you say in general your health is…? CODE ONE ONLY

- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Bad
- ☐ Very bad

Q20. Looking at the information on SHOWCARD J, how many portions of fruit or vegetables would you say you eat in a typical day? CODE ONE ONLY SHOWCARD J

- ☐ At least 5 portions
- ☐ At least 3 portions, but less than 5 portions
- ☐ At least one portion, but less than 3 portions
- ☐ About one portion
- ☐ Less than one portion
- ☐ Don't know
- ☐ Prefer not to say

Q21. Do you, or have you ever, smoked? CODE ONE ONLY

- ☐ Yes I currently smoke — Go to Q22
- ☐ Yes but I no longer smoke — Go to Q23
- ☐ No — Go to Q23

Q22. On average, how many cigarettes (including roll ups, cigars etc) do you smoke per day? WRITE IN NUMBER OF CIGARETTES PER DAY

☐

Q23. How many days in a typical week do you usually drink alcohol? CODE ONE ONLY. NOTE: ALSO THINK ABOUT SPECIAL OCCASIONS

- ☐ 7 days — Go to Q24
- ☐ 5-6 days — Go to Q24
- ☐ 2-4 days — Go to Q24
- ☐ Once per week — Go to Q24
- ☐ Less than once per week — Go to Q24
- ☐ I don't drink — Go to Q25

Q24. Looking at the information on SHOWCARD K, how many days in an average week, do you drink more than [WOMEN 2-3 units] [MEN 3-4 units] of alcohol? CODE ONE ONLY. SHOWCARD K FOR UNIT DEFINITIONS

- ☐ 0 days
- ☐ 1 day
- ☐ 2 days
- ☐ 3 days
- ☐ 4 days
- ☐ 5 days
- ☐ 6 days
- ☐ 7 days
- ☐ Prefer not to say
- ☐ Don't know

Q25. Can you tell me how frequently, if at all, you do the following? SHOWCARD L AND CODE ALL THAT APPLY

PHYSICAL ACTIVITY SHOULD BE OF MODERATE INTENSITY* - PROMPT - *FOR AT LEAST 30 MINUTES AT A TIME WHERE THE PARTICIPANT IS SLIGHTLY OUT OF BREATH BUT ABLE TO TALK

	At least 5 times a week	3-4 times a week	Less than 3 times a week	Never	Don't know
Take part in ANY physical activity* (e.g. brisk walking, cycling, housework, gardening, DIY, swimming, or sport)	☐	☐	☐	☐	☐
Participate in any sport (e.g. playing football, netball, attending an aerobics class, visiting the gym, visit a sports/leisure centre, running, cycling, swimming etc)	☐	☐	☐	☐	☐

Q26. And how would you rate the quality of your sleep in the last month? CODE ONE ONLY

☐ Good ☐ Average ☐ Poor ☐ Not sure

Q27. And approximately, how long have you typically slept for per night during the last month (including naps during the day). WRITE IN NUMBER OF HOURS PER DAY (ROUNDED NEAREST HOUR)

☐

I am now going to hand over the questionnaire to you, and I'd like you to complete the following questions about your thoughts and feelings in the past two weeks. The aim of this is to find out about local people's feelings in general. Your responses will not be linked back to you, remaining anonymous when the survey findings are reported.

Q28. Please tell me which best describes your experience of each statement over the last two weeks…. SHOWCARD M AND CODE ONE ONLY FOR EACH

	All of the time	Often	Some of the time	Rarely	None of the time
I've been feeling optimistic about the future	☐	☐	☐	☐	☐
I've been feeling useful	☐	☐	☐	☐	☐
I've been feeling relaxed	☐	☐	☐	☐	☐
I've been feeling interested in other people	☐	☐	☐	☐	☐
I've had energy to spare	☐	☐	☐	☐	☐
I've been dealing with problems well	☐	☐	☐	☐	☐
I've been thinking clearly	☐	☐	☐	☐	☐
I've been feeling good about myself	☐	☐	☐	☐	☐
I've been feeling close to other people	☐	☐	☐	☐	☐
I've been feeling confident	☐	☐	☐	☐	☐
I've been able to make up my own mind about things	☐	☐	☐	☐	☐
I've been feeling loved	☐	☐	☐	☐	☐
I've been interested in new things	☐	☐	☐	☐	☐
I've been feeling cheerful	☐	☐	☐	☐	☐

Q29. And all things considered, how satisfied are you with your life as a whole nowadays? On a scale of 0-10, where 0 is extremely dissatisfied and 10 is extremely satisfied. CODE ONE ONLY

☐ 1	☐ 5	☐ 9
☐ 2	☐ 6	☐ 10
☐ 3	☐ 7	☐ 11 Don't know/Refused
☐ 4	☐ 8	

Q30. Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months? (include problems related to old age) CODE ONE ONLY. NOTE: INCLUDES MENTAL HEALTH

☐ Yes, limited a lot	Go to Q31
☐ Yes, limited a little	Go to Q31
☐ Not at all	Go to Q32

Q31. How would you describe your impairement? CODE ALL THAT APPLY

☐ Physical ☐ Sensory ☐ Learning ☐ Mental ☐ Other

The following questions are designed to be asked of everyone to find out how physically active and healthy people who live in the Coventry area are in comparison to people living elsewhere.

Q32. Please tell which of these statements best describes your level of mobility at the moment? SHOWCARD N AND CODE ONE ONLY

☐ I have no problems in walking about
☐ I have some problems in walking about
☐ I am confined to bed

Q33. Please tell which of these statements best describes your level of ability with regard to self-care? SHOWCARD O AND CODE ONE ONLY

☐ I have no problems with self-care
☐ I have some problems washing or dressing myself
☐ I am unable to wash or dress myself

Q34. Which of these statements best describes the extent to which you are able to carry out usual activities such as work, study, housework, family or leisure activities? SHOWCARD P AND CODE ONE ONLY

☐ I have no problems with performing my usual activities
☐ I have some problems with performing my usual activities
☐ I am unable to perform my usual activities

Q35. Which of these statements best describes the level of pain or discomfort you may be experiencing? SHOWCARD Q AND CODE ONE ONLY

- ☐ I have no pain or discomfort
- ☐ I have moderate pain or discomfort
- ☐ I have extreme pain or discomfort

Q36. And which of these statements best describes the level of anxiety or depression you may be experiencing? SHOWCARD R AND CODE ONE ONLY

- ☐ I am not anxious or depressed
- ☐ I am moderately anxious or depressed
- ☐ I am extremely anxious or depressed

Q37. In order to help gauge the state of health of people in the local area, compared with those in other areas, I would like you to indicate how good or bad your own health is today, in your opinion? For this we are using a scale of 0 to 100 and I would like you to indicate the point on the scale which best reflects how good or bad your health state is today. SHOWCARD S (SCALE OF 0 - WORST IMAGINABLE HEALTH STATE TO 100 - BEST IMAGINABLE HEALTH STATE) WRITE IN NUMERICAL VALUE GIVEN

☐

Section 6: Work and Training

Q38. Which of the following best describes your current economic status? SHOWCARD S and CODE ONE ONLY

- ☐ In full time paid work
- ☐ In part time paid work
- ☐ Self employed
- ☐ Taking part in a government training programme (e.g. trade and modern apprenticeships, work based learning for adults)
- ☐ Registered unemployed/signing on for Job Seekers Allowance
- ☐ Not registered unemployed but actively seeking work (i.e. have actively looked for work in the last 4 weeks)
- ☐ At home/not seeking work - (looking after the home or family)
- ☐ Long-term sick or disabled
- ☐ Retired
- ☐ In full-time education
- ☐ Doing unpaid/voluntary work
- ☐ Carer
- ☐ Other PLEASE SPECIFY

Q38 other

Q39. And could you tell me, which of these is your highest qualification? SHOWCARD T AND SINGLE CODE. If the qualification is not listed, select the nearest equivalent. REFERS TO THE INDIVIDUAL RESPONDENT NOT THE HOUSEHOLD

- ☐ **Level 1:** 1+ 'O' levels/CSE/GCSE (any grade), NVQ level 1, Foundation GNVQ.
- ☐ **Level 2**: 5+ 'O' levels, 5+ CSEs (grade 1), 5+ GCSEs (grade A - C), School Certificate, 1+ 'A' levels/'AS' levels, NVQ level 2, Intermediate GNVQ or equivalents.
- ☐ **Level 3:** 2+ 'A' levels, 4+ 'AS' levels, Higher School Certificate, NVQ level 3, Advanced GNVQ or equivalents.
- ☐ **Level 4/5:** First degree, Higher Degree, NVQ levels 4 - 5, HNC, HND, Qualified Teacher Status, Qualified Medical Doctor, Qualified Dentist, Qualified Nurse, Midwife, Health Visitor or equivalents.
- ☐ **Other qualifications/level unknown**: Other qualifications (e.g. City and Guilds, RSA/OCR, BTEC/Edexcel), Other Professional Qualifications.
- ☐ No qualifications

Q40. Which of these phrases comes closest to describing your feelings about your household income these days? SHOWCARD U and CODE ONE ONLY

- ☐ Living comfortably on present income
- ☐ Coping on present income
- ☐ Finding it difficult on present income
- ☐ Finding it very difficult on present income

Q41. How often would you say you have been worried about money during the last few weeks? CODE ONE ONLY

- ☐ Almost all the time
- ☐ Quite often
- ☐ Only sometimes
- ☐ Never

Section 7 - General Profile Questions

Finally we've got a few questions about you; these are just to make sure we have covered a representative cross section of Coventry people.

Q42. Interviewer record gender CODE ONE ONLY

- ☐ Male
- ☐ Female

Q43. How old are you? SHOWCARD V and CODE ONE ONLY

- ☐ 16-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65-74
- ☐ 75 or over

Q44. What is your marital status? SHOWCARD W and CODE ONE ONLY. INTERVIEWER NOTE: SELECT OPTION THAT BEST FITS

- ☐ Single (Never married and never registered a same-sex civil partnership)
- ☐ Co-habiting
- ☐ Married
- ☐ Separated but still legally married
- ☐ Divorced
- ☐ Widowed
- ☐ In a registered same-sex civil partnership
- ☐ Separated but still legally in a same-sex civil partnership
- ☐ Formerly in a same-sex civil partnership that is now legally dissolved
- ☐ Surviving partner from a same-sex civil partnership

Q45. How many people living permanently in your household (including yourself) are in each of the following categories? (Write the number in each category, enter 0 if the answer to any category is nil). WRITE NUMBER of PEOPLE FOR EACH CATEGORY

1) Pre-school age (0-4 years) ..... ☐
2) Primary school age (5-11 years)..... ☐
3) Secondary school age (12-16 years).... ☐
4) Post school education (16/17 years) .... ☐
5) Adult (18-59 or 64)..... ☐
6) Retired (60 or 65+) ..... ☐

Q46. Please can you tell me which of the numbered options on SHOWCARD X best describes you? Please just read out the letter on the showcard which best describes you. If you prefer not to say, I can record that instead. CODE ONE ONLY

- ☐ a) Heterosexual
- ☐ b) Gay man
- ☐ c) Gay woman/lesbian
- ☐ d) Bisexual
- ☐ e) Other
- ☐ f) Prefer not to say

Q47. And looking at the card which letter best describes your religion? SHOWCARD Y AND CODE ONE ONLY

- ☐ a) No religion
- ☐ b) Christian (including Church of England, Catholic, Protestant, and all other Christian denominations
- ☐ c) Buddhist
- ☐ d) Hindu
- ☐ e) Jewish
- ☐ f) Muslim
- ☐ g) Sikh
- ☐ h) Prefer not to say
- ☐ i) Other religion PLEASE SPECIFY

Q47. If other, please specify

Q48. And how would you describe your ethnicity? SHOWCARD Z and CODE ONE ONLY

- ☐ White British
- ☐ White Irish
- ☐ White Other
- ☐ Mixed: White and Asian
- ☐ Mixed: White and Black Caribbean
- ☐ Mixed: White and Black African
- ☐ Mixed: Other
- ☐ Asian: Indian
- ☐ Asian: Pakistani
- ☐ Asian: Bangladeshi
- ☐ Asian: Other
- ☐ Black: Caribbean
- ☐ Black: African
- ☐ Black: Other
- ☐ Chinese
- ☐ Other
- ☐ Prefer not to say

Q48. If other, please specify

Q49. And finally, can I ask you what three words summarise Coventry as a place?

1st word .....

2nd word .....

3rd word .....

Q50. The Coventry Partnership may want to involve people more in the future, looking at ways of improving services and wellbeing for residents. Would you be interested in taking part in further consultation such as workshops, focus groups and other surveys like this? CODE ONE ONLY

- ☐ Yes (make sure contact details are collected on front page)
- ☐ No

Q51. Would you be willing for someone from my office to contact you to make sure that this survey was carried out satisfactorily?

- ☐ Yes (collect telephone number on front page)
- ☐ No

MANY THANKS FOR YOUR ASSISTANCE IN COMPLETING THE QUESTIONAIRE

RESPONDENT TO COMPLETE: I CONFIRM THAT THIS INTERVIEW WAS CONDUCTED WITH MYSELF IN A PROPER MANNER AND THAT THE DETAILS HAVE BEEN RECORDED ACCURATLEY.

Respondent to sign:----------

Date:----------

THAT'S ALL THE QUESTIONS, THANK YOU VERY MUCH FOR COMPLETING THE SURVEY

Client Number:

Dear client,

This programme is partly funded by Coventry Health Improvement Programme (CHIP) and is part of an evaluation of CHIP services. CHIP is trying to find out how this service might affect your mental wellbeing. Your answers are valuable in helping to understand mental wellbeing and helping to improve services in Coventry.

The questions on the next page ask about your mental wellbeing over the past 2 weeks. It doesn't take long to complete, and you don't have to complete it if you don't want to.

Your answers will be kept safe and secure at Swanswell. Personally identifying information will ALWAYS remain confidential.

If you are happy to complete this scale, please fill in the requested information in the boxes below and turn to page 2.

Print your first and last name	
Your signature	
Today's date:	**____ /____ / ____**

Client Number:

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Please continue to page 3.

Please complete the following questions:

1. Your age in years	____ ____
2. Are you male of female? (please tick a box)	**Male** 1 **Female** 2
3. What are the first 4 digits of your postcode?	_____ _____ _____ _____
4. What is your ethnicity?	
5. What is your primary drug?	
6. If any, what is your secondary drug?	
7. Please enter today's date	___ /___ / ___

Any other comments:

Thank you for your participation!

Client Number:

Please enter today's date	___ /___ / ___

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Client Number:

Please enter today's date	___ /___ / ___

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

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I've been feeling useful	1	2	3	4	5
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I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Client Number:

Please enter today's date	___ /___ / ___

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

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I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Client Number:

Dear client,

This programme is partly funded by Coventry Health Improvement Programme (CHIP) and is part of an evaluation of CHIP services. CHIP is trying to find out how this service might affect your mental wellbeing. Your answers are valuable in helping to understand mental wellbeing and helping to improve services in Coventry.

The questions on the next page ask about your mental wellbeing over the past 2 weeks. It doesn't take long to complete, and you don't have to complete it if you don't want to.

Your answers will be kept safe and secure at TTP. Personally identifying information will ALWAYS remain confidential.

If you are happy to complete this scale, please fill in the requested information in the boxes below and turn to page 2.

Print your first and last name	
Your signature	
Today's date:	**____ /____ / ____**

Client Number:

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
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I've been feeling useful	1	2	3	4	5
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I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Please continue to page 3.

Please complete the following questions:

1. Your age in years	____ ____
2. Are you male of female? (please tick a box)	**Male** 1 **Female** 2
3. What are the first 4 digits of your postcode?	_____ _____ _____ _____
4. What is your ethnicity?	
5. What is your primary drug?	
6. If any, what is your secondary drug?	
7. Please enter today's date	___ /___ / ___

Any other comments:

Thank you for your participation!

Client Number:

Please enter today's date	___ /___ / ___

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

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I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Client Number:

Please enter today's date	___ /___ / ___

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

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I've been feeling useful	1	2	3	4	5
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I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Client Number:

Please enter today's date	___ /___ / ___

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

APPENDIX 10.6

Please record ID number from sticker placed on envelope	
First and last name of pupil:	
Today's date:	_____ /_____ / _____
Signature of Mentor:	

Before beginning sessions,
please inform the pupil of the following information:

- The scale is being used to see if the Wellbeing Mentors Programme is helpful to pupils.

- The information from the scale might tell us how we can be more helpful to students.

- Their parents and teachers won't be able to see their scores.

- That the information will be kept safe and secure- it will be kept confidential.

- They don't have to complete the scale if they don't want to.

APPENDIX 10.6

Wellbeing Mentor to complete these boxes:

School: _____

Year Group: Y___

Sex: ____

WEMWBS number: **1**

Age____

Postcode: __ __ __(first 3 digits)

Date completed: ___/___/___

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

APPENDIX 10.6

Wellbeing Mentor to complete:

WEMWBS number 2

Completion of wellbeing mentorship

Date completed:___/___/___

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

APPENDIX 10.6

Wellbeing Mentor to complete:

WEMWBS number 3

Follow up:

6 to 10 weeks from completion

Date completed:___/___/___

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Client ID Num

15+ Questionnaire

Appendix 10.7

One Body One Life

Health Assessment

As you have decided to take part in One Body One Life it is likely that the amount of exercise you do is going to increase. For most people physical activity should not cause any problem or hazard, but this questionnaire has been designed to identify the small number of people who should visit their Doctor before taking part.

We would be grateful if you would take a few moments to complete this questionnaire about your current eating and physical activity habits so we can show you the improvements you have made to your lifestyle. We will ask you the same questions at the end of the programme.

Venue……..…… Date……

Personal Details

Clients Full Name		**DOB**	
Age		**Sex**	
Address	**Post Code**		
Telephone		**Mobile**	
Email address			
Emergency Contact Name		**Relationship to you**	
Emergency Tel Number			

Family Members (attending programme)

	Full Name	DOB
Partner/Carer/Parent		
Child/Sibling (1)		
Child/Sibling (2)		
Child/Sibling (3)		
Child/Sibling (4)		

Ethnic Origin

1. White: British		2. White: Irish		3. White: Other	
4. Mixed: White and Black Caribbean		5. Mixed: White and Black African			
6. Mixed: White and Asian		7. Mixed: Other Mixed			
8. Asian or Asian British: Indian		9. Asian or Asian British: Pakistan			
10. Asian or Asian British: Bangladeshi		11. Asian or Asian British: Other Asian			
12. Black or Black British: Black Caribbean		13. Black or Black British: Black African			
14. Black or Black British: Other Black		15. Chinese			
16. Other Ethnic Group		17. Not Given			
18. If Other, Please Specify					

PAR-Q

2. Has your doctor ever said you have a heart condition?
   Yes ☐ No ☐ Details……

3. Have you had bouts of rapid or irregular heart beats?
   Yes ☐ No ☐ Details……

4. Do you experience pressure or pain in your chest, neck, shoulders or arm during or immediately after physical activity
   Yes ☐ No ☐ Details……

5. In the past month have you had a pain in your chest when you were not doing physical activity?
   Yes ☐ No ☐ Details……

6. Do you have a bone or joint problem that could be made worse by a change in the amount of physical activity you do?
   Yes ☐ No ☐ Details……

7. Do you ever feel faint or have spells of severe dizziness that may cause you to lose balance?
   Yes ☐ No ☐ Details……

8. Do you have diabetes?
   Yes ☐ No ☐ Details……

8. Do you suffer from Asthma? **(If yes, please make sure you bring your inhaler with you to all sessions)**
   Yes ☐ No ☐ Details……

9. Are you or may you be pregnant? **(If yes please speak to your doctor before exercising)**
   Yes ☐ No ☐

Allergy Questionnaire

Do you suffer from any allergies?	Yes		No	
If yes, please specify:				
Are you registered disabled?	Yes		No	
If yes, what is your disability?				
Is your Doctor currently prescribing drugs (for example, water pills) or your blood pressure or heart condition?	Yes ☐		No ☐	

Doctors Details

GP's Name		**Surgery Name**	
Surgery Address			
Surgery Tel Number			

If you answered YES to one or more of the previous questions
Talk with your Doctor by phone or in person BEFORE you start becoming much more physically active or BEFORE you have a fitness appraisal. Tell your doctor about the PAR-Q and to which questions you answered YES.

- You may be able to do any activity you want – as long as you start slowly and build up gradually. Or, you may need to restrict your activities to those which are safe for you. Talk with your doctor about the kinds of activities you wish to participate in and follow his/her advice.
- Find out which community programmes are safe and helpful for you.

If you have answered NO to all questions
If you have answered No honestly to all PAR-Q questions, you can be reasonably sure you can:

- Start becoming much more physically active – begin slowly and build up gradually. This is the safest and easiest way to go.
- Take part in a fitness appraisal – this is an excellent way to determine your basic fitness so that you can plan the best way for you to live actively.

DELAY BECOMING MORE ACTIVE:

- If you are not feeling well because of a temporary illness such as a cold or a fever – wait until you feel better.
- If you are or may be pregnant – Talk to your doctor before you start becoming more active.

Please note: If your health changes so that you answer YES to any of the previous questions, tell your fitness or health professional. Ask whether you should change your physical activity plan.

DECLARATION

I agree and understand the terms and conditions of use and I confirm that my answers to the questions overleaf are to the best of my knowledge correct. It is my responsibility to inform the lifestyle coach of all medication that I am currently taking and keep the lifestyle coach informed if I am diagnosed with any new health problems or if there are any changes to my medication.

It is my responsibility to tell the coaches if I have been feeling unwell since the last time I exercised or have new symptoms before I start the next exercise session. I must tell the coaches if I start to feel unwell during exercise.

I hereby consent to taking part in the One Body One Life Scheme. I agree to abide by the programme plan as designed with the Lifestyle Coaches. I understand that I am free to withdraw from the scheme at any stage by informing the coach.

I hereby give permission for any of the information above to be accessed by any qualified Professional who supervises any of my programme, on the understanding that the Professional treats this information in the strictest confidence.

The Coventry City Council Staff assume no liability for persons who undertake Physical Activity and Healthy Eating, and if in doubt after completing this questionnaire; consult your doctor prior to taking part.

I agree for the Healthy and Physical Activity Team to pass on my contact details to an appropriate Health Agency if necessary and I am happy for that agency to contact me to discuss their service further

If you are not happy for your details to be passed on, please tick this box ☐

I have read, understand and completed this questionnaire. Any questions I had were answered to my full satisfaction. I confirm that to the best of my knowledge the information given on this form is correct and true.

NAME……..DATE……

SIGNATURE……WITNESS……..

PHOTO CONSENT

Occasionally, Coventry City Council would like to take photographs or video film of One Body One Life activities. These images may appear in future printed publications, promotional mechanisms (ie. Leaflets, posters, website and videos) or local press.

I hereby consent for my image to be used for the means identified above. I understand that I can withdraw my consent at any time and if I do not want my image taken I will make this clear to the photographer/camera crew at the time.

SIGNATURE……DATE……

Health Assessment

Parameter	Start	End
Height (cm)		
Weight (kg)		
Body Fat (%)		
Body Mass Index		
BMI Percentile		
Waist Circumference (cm)		
Hip Circumference (cm)		
Waist to Hip Ratio		
Blood Pressure (sys/dia)	/	/
Heart Rate		
Expiratory Volume (ml)		
Visceral Fat		
TBW%		
Metabolic Age		

Ongoing Comments:

Health Questionnaire

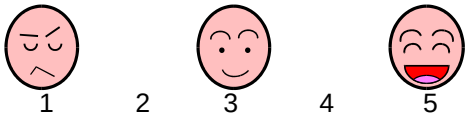
1. Where did you hear about One Body One Life?

School/College	☐	Leaflet/Poster	☐	Where……..	
Word of Mouth	☐	Radio	☐		
Local GP/Health Prof	☐	Community Centre	☐		
Internet	☐	Other	☐		
Newspaper/Magazine	☐	If Other, Please State ……			

2. How well advertised is One Body One Life in your local area?
(Please circle the number which best describes how well advertised)

1 Very poorly advertised — 2 — 3 Neither well nor poorly advertised — 4 — 5 Very well advertised

3. How would you describe your general health?
(Please circle the number which best describes your health)



1 Very Poor — 2 Poor — 3 Fair — 4 Good — 5 Very Good

4. During the last week, how often have you spent half an hour or more of moderate intensity on the following exercises? (Getting slightly out of breath and warm)

Activity	0	1	2	3	4	5+	Activity	0	1	2	3	4	5+
Exercise Club							Walking						
Swimming							Cycling						
Dancing							Gardening						
Running							Household Duties						
Football							Washing Car						
Netball							Walking up Stairs						
Other (1)							Other (2)						
If other, Please State:							If other, Please State:						

5. On a typical day, how much fruit and vegetables do you eat? (Please Circle)
(This can be dried, fresh, frozen or tinned) One portion is the same as a handful.

0 1 2 3 4 5+

6. On a typical day, how many crisps, sweets, chocolates, biscuits and cakes do you eat? (Please Circle)

0 1 2 3 4 5+

7. Typically, how much fast food, take aways and bought microwavable dinners do you eat per week? (Please Circle)

0 1 2 3 4 5+

Health Questionnaire

8. How many glasses of non alcoholic drinks do you drink on a typical day?	0 1 2 3 4 5+
9. How many sugary drinks do you have on a typical day? i.e. Hot chocolate, fizzy drinks, energy drinks.	0 1 2 3 4 5+
10. Do you drink alcohol?	Yes / No
11. If Yes, how many units per week? * *1 unit = a "small pub measure 125ml" of wines/spirits or a half pint of beer/cider	Number of units _____
12. Do you smoke?	Yes / No
13. If Yes, how many per day?	Number of cigarettes ___
14. In a typical day, how many hours do you spend sitting in front of a TV or computer?	0 1 2 3 4 5+

One Body One Life

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts.

Please tick the box that best describes your experience of each over the last 2 weeks

STATEMENTS	None of the time 1	Rarely 2	Some of the time 3	Often 4	All of the time 5
15. I've been feeling optimistic about the future					
16. I've been feeling useful					
17. I've been feeling relaxed					
18. I've been feeling interested in other people					
19. I've had energy to spare					
20. I've been dealing with problems well					
21. I've been thinking clearly					
22. I've been feeling good about myself					
23. I've been feeling close to other people					
24. I've been feeling confident					
25. I've been able to make up my own mind about things					
26. I've been feeling loved					
27. I've been interested in new things					
28. I've been feeling cheerful					

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FootballFoundation football's biggest supporter

Coventry NDC Our Future in our Hands

NHS Coventry

Client ID Num

15+ Questionnaire

One Body One Life

END OF COURSE QUESTIONNAIRE 1

We would be grateful if you would take a few moments to complete this questionnaire about your current eating and physical activity habits so we can show you the improvements you have made to your lifestyle.

First Name		**Surname**	
Date of Birth		**Venue**	

1. How would you describe your general health? (Please circle the number which best describes your health)

1 Very Poor 2 Poor 3 Fair 4 Good 5 Very Good

2. Since joining the One Body One Life programme have you joined a Sports Club/Exercise Class? (If yes, please give details)

Yes ☐ No ☐

Name of Club/Class:……..
Address:……
……
Contact Details:……
Start Date:……

3. During the last week, how many times did you spend more than half an hour on each of the following?

Activity	0	1	2	3	4	5+	Activity	0	1	2	3	4	5+
Exercise Club							Walking						
Swimming							Cycling						
Dancing							Gardening						
Running							Household Duties						
Football							Washing Car						
Netball							Walking up Stairs						
Other (1)							Other (2)						
If other, please state:							If other, please state:						

4. On a typical day, how much fruit and vegetables do you eat? (Please Circle)
(This can be dried, fresh, frozen or tinned) One portion is the same as a handful.

0 1 2 3 4 5+

5. On a typical day, how many crisps, sweets, chocolates, biscuits and cakes do you eat? (Please Circle)

0 1 2 3 4 5+

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NHS Coventry

Coventry City Council

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www.coventry.gov.uk/beactivebehealthy

6. Typically, how much fast food, take aways and bought microwavable dinners do you eat per week? (Please Circle)	0 1 2 3 4 5+											
7. How many glasses of non alcoholic drinks do you drink on a typical day?	0 1 2 3 4 5+											
8. How many sugary drinks do you have on a typical day? i.e. Hot chocolate, fizzy drinks, energy drinks.	0 1 2 3 4 5+											
9. Do you drink alcohol?	Yes / No											
10. If Yes, how many units per week? * *1 unit = a "small pub measure 125ml" of wines/spirits or a half pint of beer/cider	Number of units _____											
11. Do you smoke?	Yes / No											
12. If Yes, how many per day?	Number of cigarettes ___											
13. In a typical day, how many hours do you spend sitting in front of a TV or computer?	0 1 2 3 4 5+											
14. Do you think you will continue with your healthy lifestyle?	Yes / No											
15. If you have answered No, what will prevent you from keeping these changes?	Cost		Fear of Risk to Health		Transport		Family comitments					
	Time		Fear of risk of injury		Poor Health		Work comitments					

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts.

Please tick the box that best describes your experience of each over the last 2 weeks

STATEMENTS	None of the time 1	Rarely 2	Some of the time 3	Often 4	All of the time 5
16.I've been feeling optimistic about the future					
17.I've been feeling useful					
18. I've been feeling relaxed					
19. I've been feeling interested in other people					
20. I've had energy to spare					
21. I've been dealing with problems well					
22. I've been thinking clearly					
23. I've been feeling good about myself					
24. I've been feeling close to other people					
25. I've been feeling confident					
26. I've been able to make up my own mind about things					
27. I've been feeling loved					
28. I've been interested in new things					
29. I've been feeling cheerful					

30. How convenient were the days and times of the sessions for you? (Please circle)	1. Very Inconvenient	2. Inconvenient	3. Neither convenient nor inconvenient	4. Convenient	5. Very Convenient
31. How satisfied were you with the way the lifestyle coaches supported you? (Please circle)	1. Very Dissatisfied	2. Dissatisfied	3. Neither satisfied nor dissatisfied	4. Satisfied	5. Very Satisfied
32. How satisfied were you that the lifestyle coaches understood your needs and concerns? (Please circle)	1. Very Dissatisfied	2. Dissatisfied	3. Neither satisfied nor dissatisfied	4. Satisfied	5. Very Satisfied
33. Overall how happy were you with the One Body One Life Programme? (Please circle)	 1 Not happy at all	2	3 OK	4	5 Very Happy
34. Overall how happy were you with the staff on the One Body One Life Programme? (Please circle)	 1 Not happy at all	2	3 OK	4	5 Very Happy
35. Would you recommend this programme to a friend?	Yes / No				

36. Are you interested in joining any of the following programmes, if so, please tick the relevant box

Be Active Be Healthy Programmes		**Healthy Lifestyle**	
Coventry Healthy Walks		**Health Trainers 1:1 Coaching**	
EXTEND		**Smoking Cessation**	
Active for Health		**Active Kids**	
3 Steps to a healthier lifestyle		**Leisure Centre Activity**	
Be Active Be Healthy Training		**Mercia Mile/Coventry Half Marathon**	
Walk Leader Training		**Park Run**	
Physical Activity & Exercise Training		**Coventry Active Database**	
Level 2 Healthy Eating Qualification		**Counseling (IAPT)**	
EXTEND Tutor Training		**Other, Please give details below:**	

I have read, understand and completed this questionnaire. Any questions I had were answered to my full satisfaction. I confirm that to the best of my knowledge the information given on this form is correct and true.

NAME……DATE……

SIGNATURE……..WITNESS……

PLEASE READ CAREFULLY: Data Protection Act 1998 the data controller is Coventry City Council. Thank you for your time taken to complete this questionnaire. All information will be treated with strict confidentiality and will only be used to research the effectiveness of One Body One Life and improve our services to you.

Congratulations on completing the One Body One Life course. We are committed to supporting people to change their lifestyle, please use some of the tools and recipes that are on our website www.coventry.gov.uk/beactivebehealthy to help you continue with your lifestyle changes. We will telephone you in 12 weeks to see how you are getting on.

Course start questionnaire

To help us understand how Fit as a Fiddle makes a difference to older people, we need your views. We would be grateful if you could take a few moments to complete this questionnaire. Your answers are confidential, so please answer as honestly as you can.

Name: ……

1. Which class are you attending? ……

2. Are you: ☐ Male ☐ Female *(please tick)*

3. Age: ☐ 50-54 ☐ 55-64 ☐ 65-74 ☐ 75-84 ☐ 85-95 ☐ 95+

4. How would you describe your ethnic origin? ……

5. What is your reason for coming to the class? (*please tick all that apply*)

☐	To get fitter	☐	To socialise
☐	Friendship	☐	To get out of the house
☐	To improve my health	☐	Fun
☐	To change my lifestyle	☐	Other ……

6. How would you describe your general health?

☐ Poor ☐ Fair ☐ Good ☐ Very good ☐ Excellent

7. How many times in the last week have you exercised? (including walking to the shop, walking the dog)

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

8. On average how many portions of fruit and vegetables do you eat a day?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

9. During the last 4 weeks, did you have a lot of energy?

- ☐ All of the time
- ☐ Most of the time
- ☐ Some of the time
- ☐ A bit of the time
- ☐ None of the time

10. During the last 4 weeks, have you been a happy person?

- ☐ All of the time
- ☐ Most of the time
- ☐ Some of the time
- ☐ A bit of the time
- ☐ None of the time

11. During the past 4 weeks, did you feel tired?

- ☐ All of the time
- ☐ Most of the time
- ☐ Some of the time
- ☐ A bit of the time
- ☐ None of the time

12. During the last 4 weeks has your emotional health limited your social activities

- ☐ Extremely
- ☐ A lot
- ☐ Some difficulty
- ☐ A little
- ☐ Not at all.

13. Can you bend down to pick up clothing/tie show laces.

- ☐ Unable to do
- ☐ With extreme difficulty
- ☐ With some difficulty
- ☐ With a little difficulty
- ☐ Without difficulty

14. Can you open jars and turn on taps

- ☐ Unable to do
- ☐ With extreme difficulty
- ☐ With some difficulty
- ☐ With a little difficulty
- ☐ Without difficulty

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Thank you for taking the time to complete this questionnaire

AGE Concern Coventry

Course follow up questionnaire

To help us understand how Fit as a Fiddle makes a difference to older people, we need your views. We would be grateful if you could take a few moments to complete this questionnaire. Your answers are confidential, so please answer as honestly as you can.

Name: ……

1. Which class are you attending? ……

2. Are you: ☐ Male ☐ Female *(please tick)*

3. Age: ☐ 50-54 ☐ 55-64 ☐ 65-74 ☐ 75-84 ☐ 85-95 ☐ 95+

4. How would you describe your ethnic origin? ……

5. What is your reason for coming to the class? (*please tick all that apply*)

☐ To get fitter	☐ To socialise
☐ Friendship	☐ To get out of the house
☐ To improve my health	☐ Fun
☐ To change my lifestyle	☐ Other ……

6. How would you describe your general health?

☐ Poor ☐ Fair ☐ Good ☐ Very good ☐ Excellent

7. How many times in the last week have you exercised? (including walking to the shop, walking the dog etc)

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

8. Is the amount of exercise you do more than when you started Fit as a Fiddle?

☐ Yes ☐ No

9. On average how many portions of fruit and vegetables do you eat a day?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

10. Is the amount of fruit and vegetables you are eating more than when you started with Fit as a Fiddle?

☐ Yes ☐ No

11. During the last 4 weeks, did you have a lot of energy?

☐ All of the time
☐ Most of the time
☐ Some of the time
☐ A bit of the time
☐ None of the time

12. During the last 4 weeks what effect has the Fit as a Fiddle sessions had on emotional state, has it made you feel happy ?

☐ All of the time
☐ Most of the time
☐ Some of the time
☐ A bit of the time
☐ None of the time

13. During the past 4 weeks, did you feel tired?

☐ All of the time
☐ Most of the time
☐ Some of the time
☐ A bit of the time
☐ None of the time

14. During the last 4 weeks has your emotional health limited you social activities

☐ Extremely
☐ A lot
☐ Somewhat
☐ A little
☐ Not at all

15. Can you bend down to pick up clothing/tie shoe laces

☐ Unable to do
☐ With extreme difficulty
☐ With some difficulty
☐ With a little difficulty
☐ Without difficulty

16. Can you open jars and turn on taps

☐ Unable to do
☐ With extreme difficulty
☐ With some difficulty
☐ With a little difficulty
☐ Without difficulty

17. Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

17. Please tell us how satisfied you are with the Fit as a Fiddle class you are attending:

- ☐ Extremely satisfied
- ☐ Very satisfied
- ☐ Satisfied
- ☐ Unsatisfied
- ☐ Very unsatisfied

18. Has attending the class has made a difference to your life?

☐ Yes ☐ No

Any further comments: ……

……

……

……

Thank you

Study title

Synthesising interpretations of mental wellbeing outcomes in public health practice: a mixed methods approach

Study Summary

Mental wellbeing is a positive psychological state that can include being satisfied with life, feeling good, enjoying life and being able to cope well with challenges in the face of hardship. There are gaps in the UK knowledge base for understanding and measuring mental wellbeing in populations and communities.

The study objectives are to:

- measure correlates of mental wellbeing in the general population of Coventry
- measure mental wellbeing before and after the delivery of five different interventions implemented as part of the Coventry Health Improvement programme (CHIP)
- establish attitudes towards the role of CHIP in improving mental wellbeing in Coventry using interviews and provide a public health interpretation of results
- combine findings and use theoretical and organisational public health frameworks to interpret the measured and perceived impact of CHIP on mental wellbeing in Coventry
- consider the findings in the context of programme aims and contextualise them in terms of public health knowledge, theory and practice

These objectives will be met by analysing information from cross sectional surveys, before and after outcome evaluations, and interviews with CHIP stakeholders. This information will be analysed, then combined to describe and explore the findings using evidence based public health principles derived from theoretical and organisational literature in order to make recommendations for research and practice.

Please read on if you are interested in participating in this research study.

Invitation to participate

We would like to invite you to take part in the evaluation interviews as part of this study (objective 3 in the project summary). Before you decide we would like you to understand what the interviews are about and what it would involve for you. Feel free to talk to others about the study if you wish. Ask us if there is anything that is not clear. Our contact details are:

Name: **Rebecca Putz (RP)**
Email: r.e.putz@warwick.ac.uk
Telephone Number: 024765 75593

Name: **Aileen Clarke (AC)**
Email: aileen.clarke@warwick.ac.uk
Telephone Number: 024761 50063

What is the study about?

This study is about exploring and describing different perspectives on mental wellbeing in Coventry. One objective of this study is to find out about CHIP team members experiences of conducting interventions and evaluating mental wellbeing outcomes. To find out about these experiences, we would like to interview some CHIP evaluation team members.

Why have I been invited?

You have been invited to take part in these interviews because you have been involved in evaluating mental wellbeing as part of your role in CHIP. There are nine (9) individuals being asked to share their experiences of evaluating mental wellbeing in CHIP interventions.

Do I have to take part?

It is up to you to decide to join the study. I (RP) will describe the study and go through this information sheet with you if you like. If you agree to take part, I will then ask you to sign a consent form. You are free to withdraw at any time, without giving a reason.

What will happen to me if I take part?

If you decide to participate in an interview, we can meet at a place and time that is suitable to you (such as a nearby library study room, or at a meeting room in your office) where we'll discuss experiences during your involvement with CHIP that have to do with mental

wellbeing.

- RP will be conducting the interview.
- There is only one interview, which will last around 1 to 1 ½ hours.
- Before the interview starts we can talk about any issues you may want to talk about, and I will ask you to read, initial and sign the participant consent form.
- If you take part we'll discuss your experiences during your involvement with CHIP that have to do with mental wellbeing and aspects of delivering your project or programme. I'll provide some questions to discuss, and we can discuss questions/comments you have as well.
- I will use a digital recorder during the interview in order to concentrate on the conversation, rather than taking notes.
- After the interview has completed, and the interview content has been transcribed, a copy will be sent to you so that you may verify your contribution feels true to your thoughts/feelings about your experience.
- If you wish to amend/alter your interview transcript, we would ask that you respond within four weeks of receiving your transcript and that you provide an explanation or reason for changing aspects of your transcript.
- If you're happy with your transcript or once any amendments have been made and received, I will analyse the interview and follow up with you by providing a draft summary of the interview findings. If a direct quotation of yours is used in the study report, your consent will be sought specifically.

Expenses and payments

The payment of expenses is not available for participating in an interview.

What are the possible disadvantages and risks of taking part?

There are a small number of people being asked to interview so it may be possible for people closely involved in CHIP to identify individuals taking part (despite information being anonymised). You may or may not feel comfortable about this, so steps will be taken to ensure information is not personally identifiable (see below).

What are the possible benefits of taking part?

The possible benefits of taking part in the interviews include an opportunity to reflect on your work during CHIP, as well as the freedom to express your opinions about your project, positive or negative, in a confidential manner. The findings from the interviews may help to

improve the quality and acceptability of evaluation in community health interventions.

What if I want more information about the study?

If you have any questions about any aspect of the study or your participation in it please contact:

Rebecca Putz,
Warwick Medical School,
Coventry CV4 7AL.
Email: r.e.putz@warwick.ac.uk
Telephone Number: 024765 75593

What if there is a problem?

The University has in force a Public and Products Liability policy which provides cover for claims for "negligent harm" and the activities here are included within that coverage subject to the terms, conditions and exceptions of the policy.

Who should I contact if I wish to make a complaint?

Any complaint about the way you have been dealt with during the study or any possible harm you might have suffered will be addressed. Please address your complaint to the person below who is a senior University official entirely independent of the study:

Nicola Owen
Deputy Registrar
Deputy Registrar's Office
University of Warwick
Coventry CV4 8UW
T: 024 7652 2713 E: Nicola.Owen@warwick.ac.uk

Will my taking part in the study be kept confidential?

Yes. All information which is collected about you during the course of the research will be kept strictly confidential, and any information about you which leaves Warwick Medical School will have your name and address removed so that you cannot be recognised.

During the study data will be stored in a locked filing cabinet and will be accessed only by RP. After the study the data will be kept for five years after which it will be destroyed.

It will not be possible to identify you from any published material arising from the study. However, because of the small number of potential participants and within-organisation knowledge of CHIP roles, it may be possible for other CHIP employees to identify that you have taken part, but they will not be able to distinguish your contribution from anyone else's because of steps taken to maintain your anonymity (e.g. such as in quotations).

The information collected in the interviews will be kept in accordance with the Data Protection Policy of the University of Warwick.

Storage of data, confidentiality and anonymity

Your data will be maintained and kept anonymous and confidential in the following ways:

- ID numbers will be used to identify interviewees in the interview transcripts and all written material related to interviews. No names will be used.
- Potentially identifying information (such as naming projects or people) used in report quotations will be censored and or disguised. Quotations will be used only with additional consent.
- When the interview transcripts have been completed, a copy will be sent to you so that you may verify your contribution feels true to your thoughts/feelings about your experience. If you wish to amend/alter your interview transcript, we would ask that you respond within four weeks of receiving your transcript and that you provide an explanation or reason for changing aspects of your transcript.
- Transcripts and all hard copy interview materials will be anonymised (names will be taken out) and kept confidential in a locked filing cabinet in Warwick Medical School, and only RP will have access to this cabinet.
- The digital recordings and all other soft copy interview documents will be password protected and maintained by RP.
- All hard and soft copy data will be maintained for five years after the completion of the study (July 2018) after which they will be destroyed.

What will happen if I don't want to carry on with the study?

If you decide to withdraw from the interview, any data and information about you will be destroyed and will not be included in the study report.

What will happen to the results of the research study?

The interview data will be analysed and I will send you a draft copy of the findings to ensure you feel the results are true to your experience. The results will be used to meet the study

aim of synthesising interpretations of mental wellbeing outcomes in public health practice. The report of findings may be published in an academic journal, or presented at conferences. Access will be provided to a lay summary of the study thesis. The full thesis will be available upon request.

Who is organising and funding the research?

The Coventry Partnership and the University of Warwick jointly organise and fund this research.

Who has reviewed the study?

This study has been reviewed and given favourable opinion by the University of Warwick's Biomedical Research Ethics Committee.

You will be given a copy of this sheet and a signed consent form to keep.

Consent Form

Centre Number:
Study Number:
Participant Identification Number:

CONSENT FORM

Title of Project: _____

Name of Researcher: _____

Version Number: _____

Date: _____

Please initial box

1. I confirm I have read and understand the information sheet dated **26/01/2012 version 2** for the above study. I have had the opportunity to consider the information, ask questions of a member of the research team and have had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. ☐
3. I understand that relevant sections of my data collected during the study, may be looked at by individuals from the research team, at the University of Warwick, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. ☐
4. I agree to the interview being audiotaped/recorded. ☐
5. I agree to the use of direct quotations in publications provided that anonymity is preserved. ☐
6. I agree to take part in the above named study. ☐

Participants Name	Date	Signature
Researchers	Date	Signature

When completed: 1 (original) to be kept in research record, 1 for participant; 1 for researcher site file.

Interview Guide

Participant ID number:_____

Date:_____

Time:_____

Location:_____

Interview Start:_____

Interview finish:_____

What are the views, attitudes and beliefs of stakeholders regarding programme evaluation, public health practice and mental wellbeing outcomes during the CHIP programme?

Remind participant they can stop at any time or pass on a question if they prefer not to answer.

Introduction

Define the characteristics of professional/practitioner role

1. How would you define your day to day job?
    a. and then your role in CHIP? (how ATRs fit in)

    …can you tell me about your duties and responsibilities?

Unstructured: Thinking back to when the CHIP first started…

2. ~~When CHIP started, how did you feel about the quality of the interventions that would be delivered?~~

Structured: RE-AIM Structured Questions

REACH

3. How well do you think your project reached its target audience?

EFFICACY & Evidence

4. What is your opinion of the original project intervention(ATR)?
5. Were there any consequences of ATRs you think should have been measured?
    a. (ex) physical consequence: lower BMI, behavioural consequence: social connections

ADOPTION

6. To what extent do you think your project staff have understood and adopted the concept of mental wellbeing as relevant to health?
7. Do you think the 'joined up' programme approach of CHIP has worked well for Coventry?
    a. How has this affected you, if at all?

IMPLEMENTATION

8. How effective do you think ATRs have been?
9. Do you think there was variation in how ATRs were delivered?
    a. From the original project plan
    b. Across multiple sites and or staff
10. Do you think the project (S) was practical enough to be successfully delivered by staff?

MAINTENENCE

11. After this project /CHIP ends, do you think mental wellbeing will remain a measureable outcome in Coventry public health evaluations?
12. Do you think CHIP has a future after it ends? Why/why not

US: Reflecting on your role overall…

13. Can you tell me a bit about your experiences of your role during CHIP/this contract?
    a. …about some highlights, rewards, successes?
    b. …lowlights, challenges, unforeseen difficulties and what happened?
14. What do you see as the strengths of your project/programme?
15. What are some weaknesses/areas for improvement?
16. If you could do your CHIP role over again, what do you think you would do differently, knowing what you know now?

US: Mental wellbeing and evaluation

Thinking about mental wellbeing in terms of your role in CHIP…

17. What did you know before this project about mental wellbeing? What do you know now?
18. Has measuring mental wellbeing changed how you view other aspects of health improvement or public health?
19. ~~**(for PGRM and DPH) –** have you received feedback from project managers about integrating mental wellbeing into projects? What kind?~~
20. In your experience, do you think has CHIP made an impact on mental wellbeing in CHIP participants? In Coventry?
    a. Positive impact? Negative impact?

Conclusion

So we're winding down now, but I would like to ask you…

21. Is there anything you'd like to ask me about?
22. Are there any questions you'd like to talk about more, or revisit?

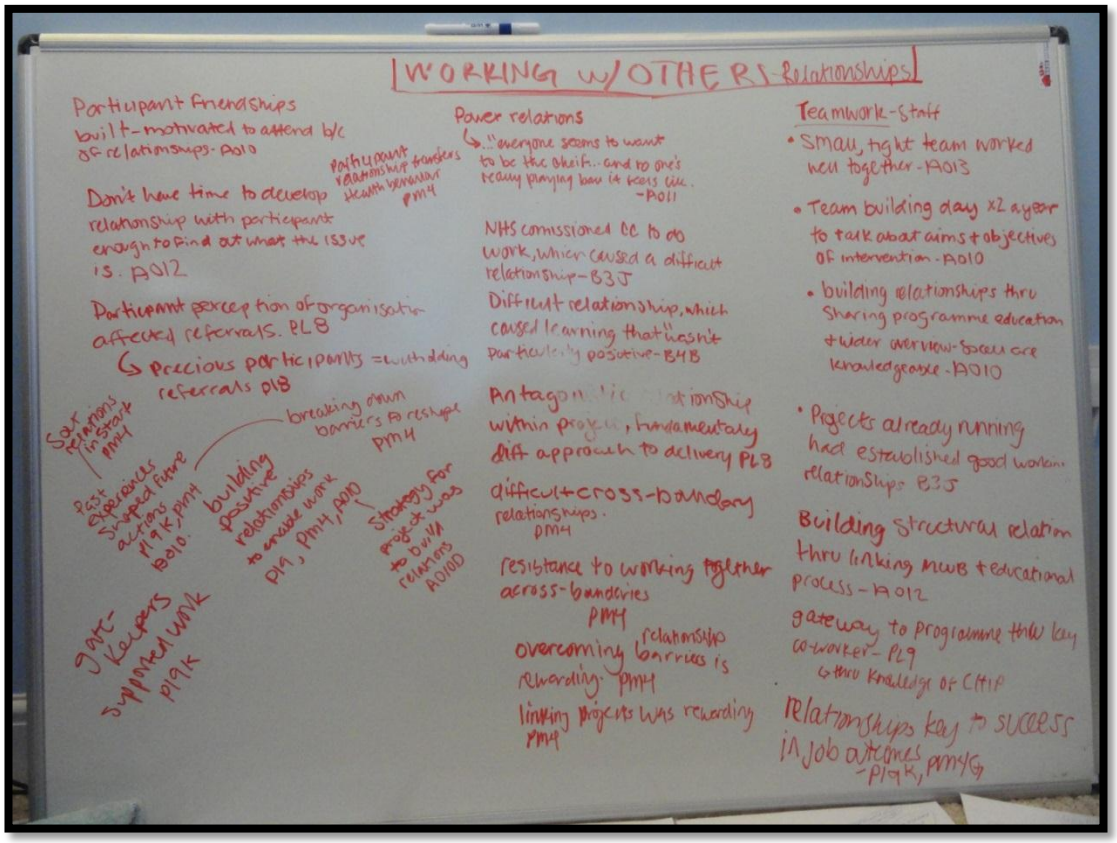
    That's it! THANK YOU! When the transcripts have been analysed, I'll send you a copy to have a look and see that you are satisfied with everything. If you have any queries about anything, you can call me or email me and we can discuss then.

APPENDIX 13

The following photographs highlight the process of creating an OSOP and developing subthemes and themes using this technique.

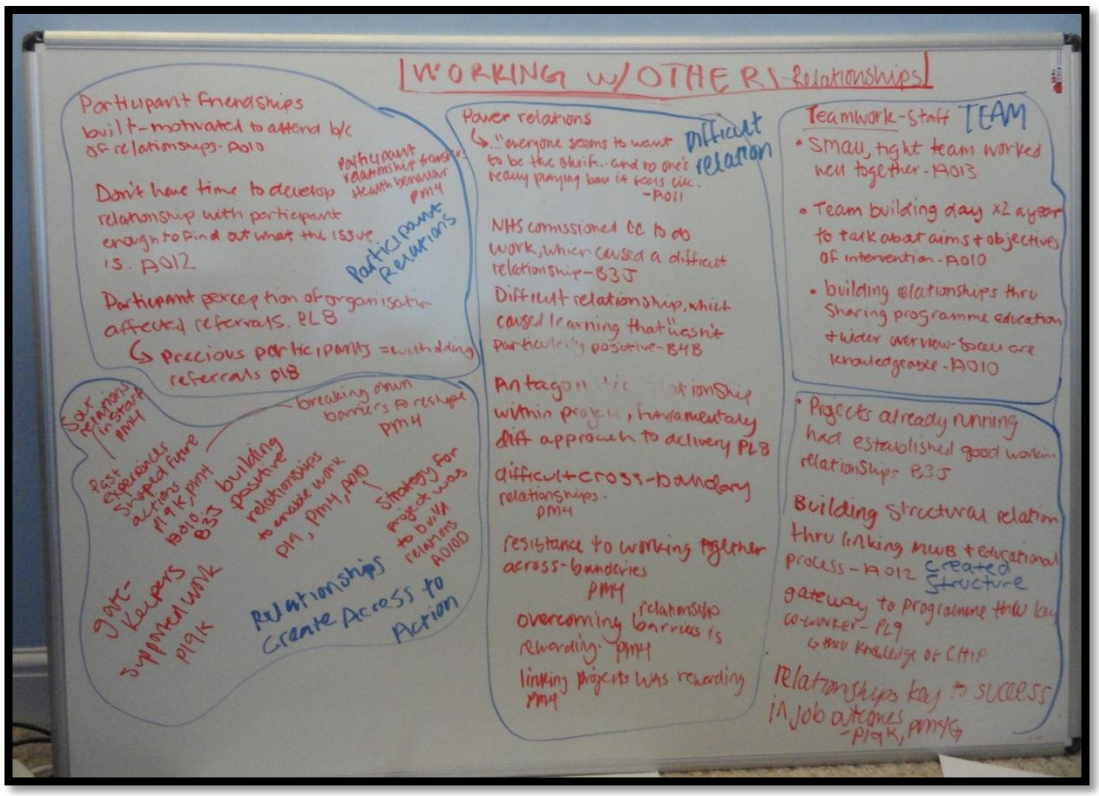
They highlight the 'working with others' category which included several subcategories, such as 'relationships' and 'working together'. Figure 1 shows a somewhat developed OSOP, with potential category themes beginning to emerge. Figure 2 shows where those themes have been further clarified. Figures 3 and 4 show a similar category, but different patterns emerging on the board. Figure 5 shows how the larger subcategories were pulled together to begin to understand the themes emerging from the entire category.

Figure 1



APPENDIX 13

Figure 2



APPENDIX 13

Figure 3

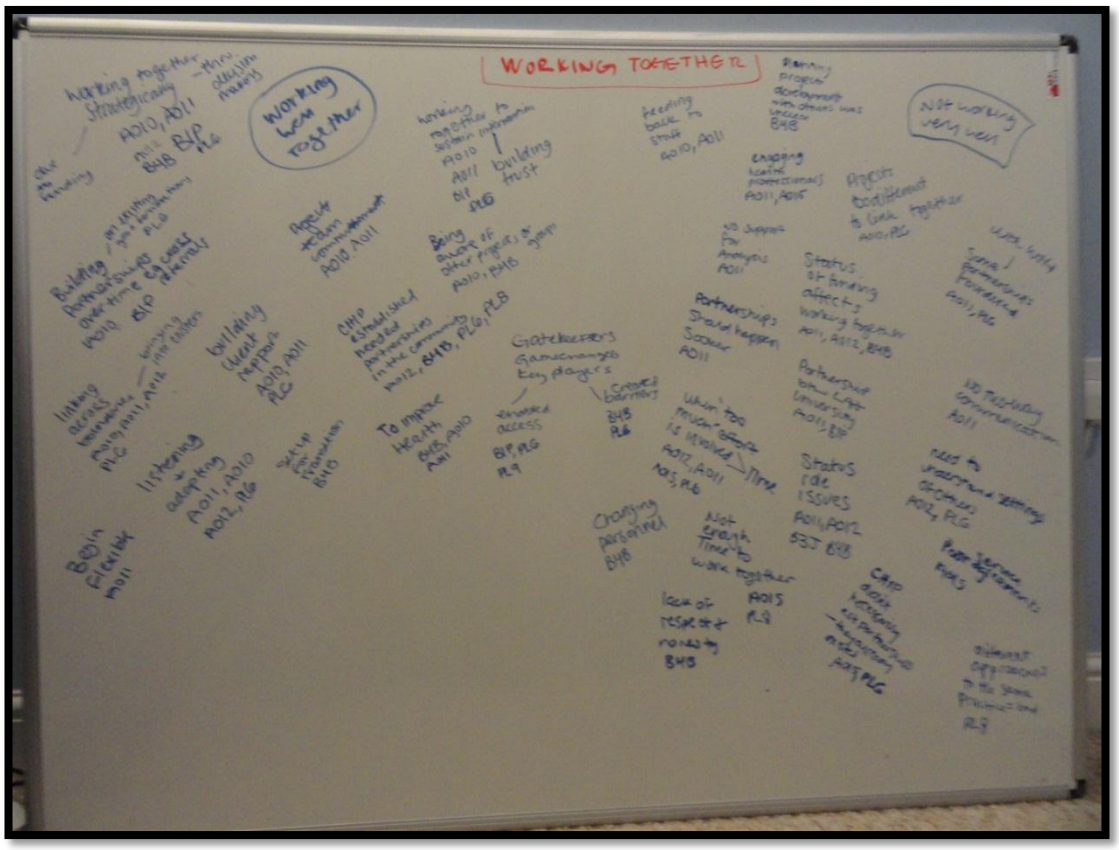
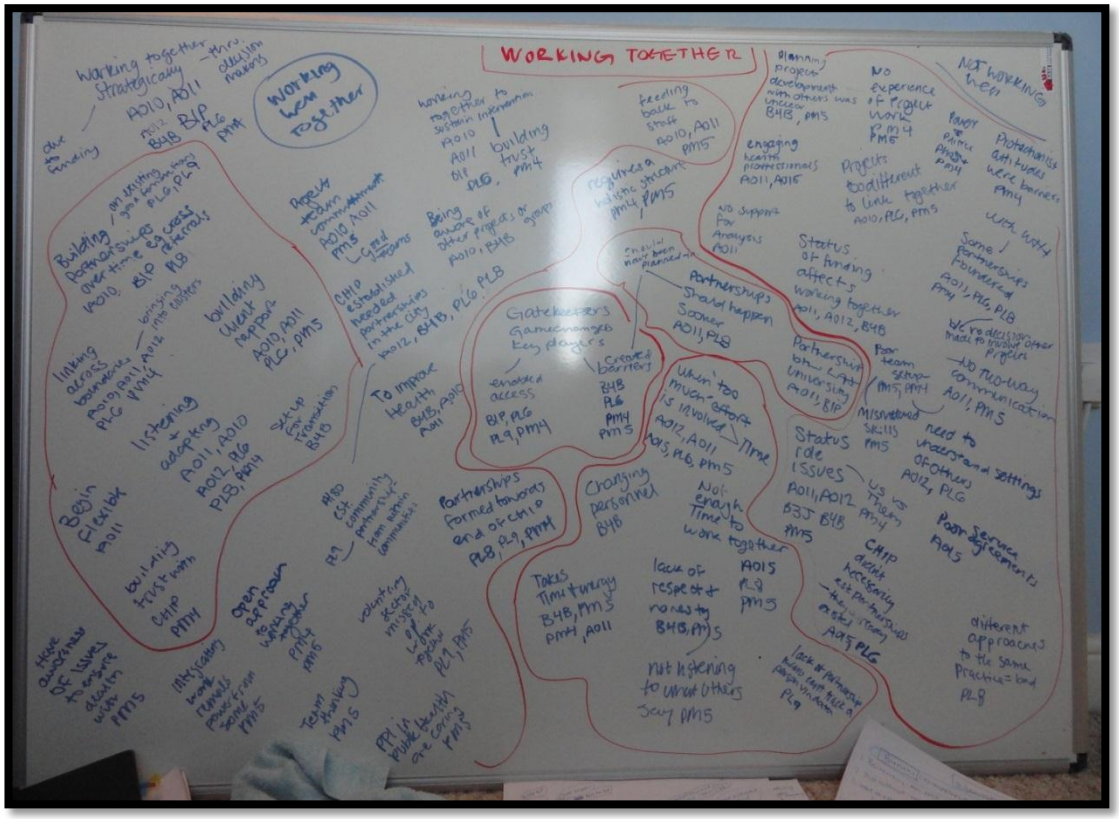
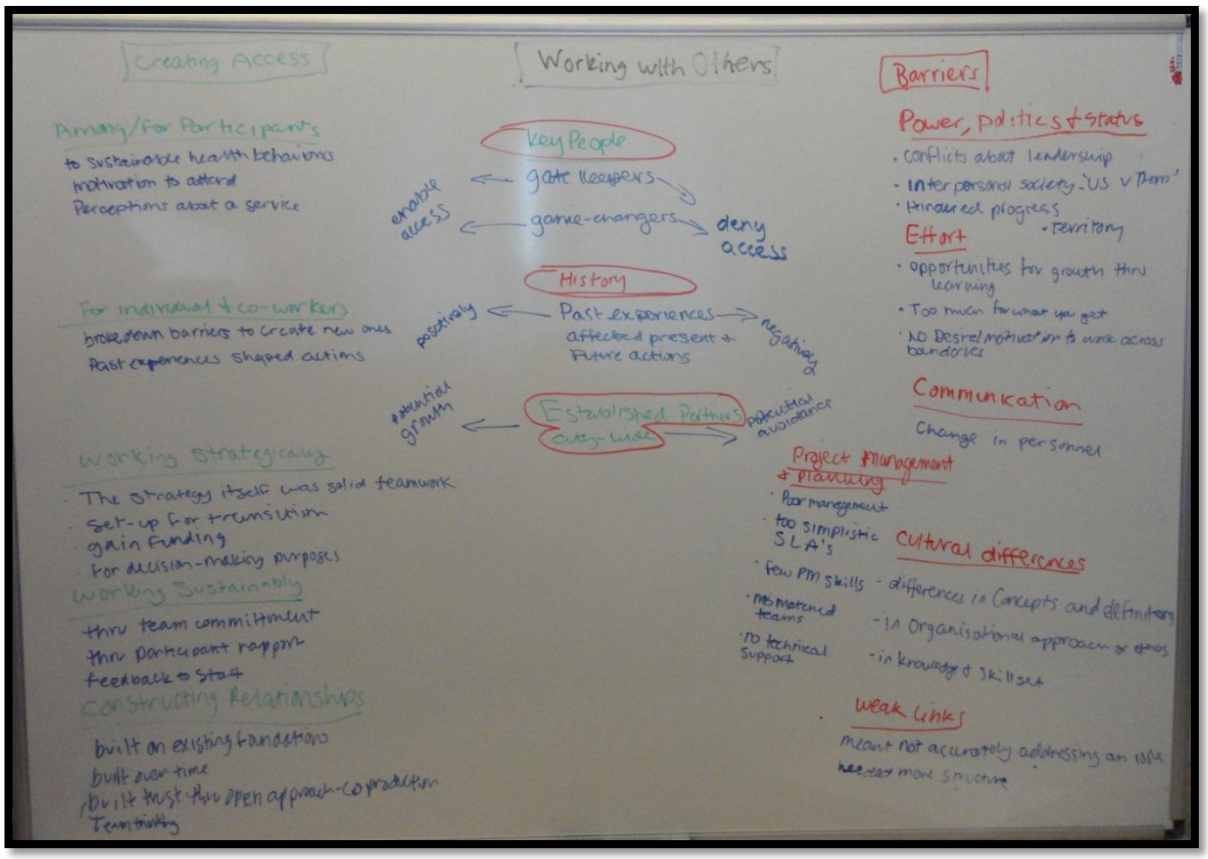


Figure 4



APPENDIX 13

Figure 5



January - March 2011

Dear Resident,

Household Survey

Coventry City Council, NHS Coventry and Warwick Medical School have commissioned BMG Research to undertake a face-to-face Household Survey across Coventry.

We are interested in your views on the quality of life you experience living here, what you think could be done to improve things in the future and issues around physical and mental wellbeing.

Please be assured this is a genuine survey and is not intended for commercial use.

If you have any questions, queries or concerns regarding this research, please contact Marc Greenwood at Coventry City Council on 024 7683 2122 or email marc.greenwood@coventry.gov.uk

Yours sincerely

Martin Reeves

Chief Executive
Coventry City Council

Appendix 14.3

January - March 2012

Dear Resident,

Household Survey

Coventry City Council, NHS Coventry and Warwick Medical School have commissioned MEL research to undertake a face-to-face Household Survey across Coventry.

We are interested in your views on the quality of life you experience living here, what you think could be done to improve things in the future and issues around physical and mental wellbeing.

Please be assured this is a genuine survey and is not intended for commercial use.

If you have any questions, queries or concerns regarding this research, please contact Marc Greenwood at Coventry City Council on 024 7683 2122 or email marc.greenwood@coventry.gov.uk

Yours sincerely

Martin Reeves
Chief Executive, Coventry City Council

6 February 2012

Warwick Medical School

Rebecca Putz
Health Sciences
Room B-020 Medical School Building
Warwick Medical School
University of Warwick
Coventry
CV4 7AL

Dear Rebecca

Study reference & title: *128/07/2011 AM01*
Evaluation of the Coventry Health Improvement Programme (E-CHIP) – TITLE CHANGED TO: Synthesising interpretations of mental wellbeing outcomes in public health practice - a mixed methods approach

Thank you for submitting your revisions to the above-named project to the University of Warwick Biomedical Research Ethics Sub-Committee for Chair's Approval.

I am pleased to confirm that I am satisfied that you have met all of the conditions and your application meets the required standard, which means that full approval is granted and you may continue with your study.

I take this opportunity to wish you success with the study and to remind you any further substantial amendments require approval from the committee before they can be made. Please keep a copy of the signed version of this letter with your study documentation. The committee also requires you to complete an End of Study Declaration Form when you reach the end of your study: this form has been e-mailed to you.

Yours sincerely,

Jane

Professor Jane Barlow
Chair
Biomedical Research
Ethics Sub-Committee

Copy:
Aileen Clarke and Sarah Stewart-Brown, Academic Supervisors
Clair Henrywood, BREC Co-ordinator

Biomedical Research Ethics Subcommittee
Enquiries: Clair Henrywood
Tel: 02476-528207
Email: brec@warwick.ac.uk

16 June 2011 APPENDIX 14.4

Rebecca Putz
Health Sciences Research Institute
Room B-020 Medical School Building
Warwick Medical School
University of Warwick
Coventry
CV4 7AL

Dear Rebecca

Secondary analysis reference & title: *128/07/2011*
Evaluation of the Coventry Health Improvement Programme (E-CHIP)

Thank you for submitting your application for the above-named project to the University of Warwick Biomedical Research Ethics Sub-Committee for Chair's Approval.

I am pleased to confirm that the documentation meets the required standard and that no ethical concerns have been raised. This means that full approval is granted and your study may commence.

I take this opportunity to wish you success with the study and to remind you that any substantial amendments require approval from the committee.

Yours sincerely,

Professor Jane Barlow
Chair
Biomedical Research
Ethics Sub-Committee

Copy:
Aileen Clarke and Sarah Stewart-Brown, Academic Supervisors
Clair Henrywood, BREC Co-ordinator

Biomedical Research Ethics Subcommittee
Enquiries: Krysia Saul
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APPENDIX 14.6

Introduction

This is a brief protocol to explain a change in an evaluation study to include primary data collection- that of interview data. The data are collected for a PhD project that uses survey, evaluation, and (proposed) interview data from the Coventry Health Improvement Programme (CHIP) to examine and evaluate mental wellbeing outcomes in the city of Coventry.

The change to the original protocol is the inclusion of interviewing. The interviews will be conducted with CHIP staff who have been involved in evaluating mental wellbeing outcomes in some capacity.

Recruiting participants

Participants will be recruited from within the evaluation team and therefore will be a purposive sample. Only CHIP staff that have undertaken an evaluation of mental wellbeing in their project or programme will be asked to participate in a one to one interview. Within CHIP there are different levels of staff involvement and service delivery, from which three types of staff will be approached:

- Project leaders (those responsible for managing the delivery of project interventions)
- Programme managers (those responsible for coordinating the project leaders)
- Directors of Public Health (those responsible for CHIP overall)

Recruitment Location

The CHIP staff being asked to take part in interviews are staff of the Coventry Partnership, which is a joint partnership between community organisations, the Coventry City Council and Coventry Teaching PCT. The interviews location may vary depending on the choice of the interviewee, but will vary between a meeting room in their office, a central library 'study room' which can be booked in advance and would be more private than an office meeting if the participant wishes.

Sample size and rationale for sample size

The sample is purposive because the purpose of the interviews is to gather views on CHIP staff experiences of evaluating mental wellbeing outcomes. Only CHIP staff who have conducted these evaluations (or were responsible for the overall delivery) can therefore discuss their experience of having done so. There are nine potential participants who fit the criteria for requesting an interview.

Semi-structured interviews with staff involved in delivering CHIP services or management (considered evaluation stakeholders) are proposed for March 2012.

The purpose of conducting interviews with stakeholders is to establish attitudes towards the role of mental wellbeing in Coventry. I plan to explore how interpretations and experiences may differ between evaluation stakeholder groups interviewed, and to examine the process of conducting interventions with mental wellbeing outcomes. These interviews are analysed alongside quantitative mental wellbeing outcome data.

Collection

I will use face to face, one-on-one semi-structured interviews to generate data. A participant information sheet will be provided and interviews will be requested with each of the project intervention leaders (max 5), with CHIP programme managers (max 2) and with public health directors (max 2). If verbal or email consent is given, the interviews will take place at a location and time suitable to the participant where a hard copy of consent can be signed. The interviews should take approximately 1 to 1.5 hours. If this consent is given, interviews will be conducted, digitally recorded and later transcribed by a transcriber. During the analysis process I will take steps to address social desirability bias, maintain anonymity and use 'member-checking' to ensure interviewees find the themes drawn from the interviews represent their views. I will ensure interviewees are satisfied with their transcripts by sending a copy of the transcript to them and asking that if they wish to amend/alter anything from their interview transcript. If they wish to amend, they are requested to do so within four weeks of receiving the transcript and also to provide an explanation for changing their transcript. Should interviewees wish to amend their transcript, it will not be possible to verify the feedback or content amendments.

Analysis

A qualitative approach will be used. I propose to use thematic analysis to identify emerging themes which might occur within, between and across groups. I will address issues of qualitative reliability and validity of the data highlighted by J Creswell in 2009.

Dissemination

Findings from the interviews will be incorporated into my thesis. Aspects of this study will be submitted for publication and presented at conferences.

APPENDIX 15

Publications associated with research from this thesis

Johnson, R, Clarke, A, Stewart-Brown S. (2013) Practising Partnership: A qualitative analysis of public health and local authority co-implementation of health and mental wellbeing improvement interventions. J Epidemiol Community Health 2013; 67. (Proceedings).

Putz R, Clarke A, Stewart-Brown S. (2012) 'Evaluating mental wellbeing in children with health related barriers to learning: results of a quasi-experimental before and after intervention'. J Epidemiol Community Health 2012; 66 (Suppl I): A35. (Proceedings).

Putz ,R, O'Hara, K, Taggart, F, Steawrt-Brown, S. (2012) 'Using WEMWBS to measure the impact of your work on mental wellbeing: A practice-based user guide' Evaluation user guide for Public Health Practitioners and those delivering community-based health improvement interventions measuring mental wellbeing, Access: http://www.healthscotland.com/documents/6074.aspx

Putz, R., Clarke, A., Hamborg, T., & Franco, O. H. (2011). What factors are associated with a validated measure of mental wellbeing in the general population in Coventry? A stratified random cross sectional survey. *Journal of Epidemiology & Community Health*, *65*(Suppl. 2), A14.

Putz ,R, O'Hara, K, Taggart, F, Steawrt-Brown, S. (2012) 'Using WEMWBS to measure the impact of your work on mental wellbeing: A practice-based user guide' Evaluation user guide for Public Health Practitioners and those delivering community-based health improvement interventions measuring mental wellbeing, Access: http://www.healthscotland.com/documents/6074.aspx

Putz, R., Clarke, A., Stewart-Brown, S. (2012). The Coventry Wellbeing Report. Internal Report for Coventry Partnership.

Putz, R., Clarke, A., Stewart-Brown, S. (2011). The Coventry Wellbeing Report. Internal Report for Coventry Partnership.

Putz, R., Hamborg, T. Clarke, A., Stewart-Brown, S., Franco, O. (2010). The Coventry Wellbeing Report. Internal Report for Coventry Partnership.

Conference Presentations & Workshops

Practising Partnership: A qualitative analysis of public health and local authority co-implementation of health and mental wellbeing improvement interventions. Presented at the 57th Society for Social Medicine Annual Conference, Brighton, England, September 2013

'Fit as a Fiddle improves mental wellbeing in addition to increased physical activity'. UK Faculty of Public Health Annual Conference, Coventry, England, July 2013

'Evaluating mental wellbeing in children with health related barriers to learning: results of a quasi-experimental before and after intervention'. Presented at the 56th Society for Social Medicine Annual General Meeting, London, England, September 2012

'What do we learn about health from the Coventry Wellbeing Report?' A presentation to the Coventry Primary Care Trust, Department of Public Health**.** Coventry, England, January 2012

'What is mental wellbeing and why is it important for health? An interactive workshop addressing issues of concept, measurement, and context through discussion and debate.' at the 55th Annual meeting of the Society for Social Medicine, Coventry, England, September 2011

'Findings from the Coventry Household Survey 2010' at the Coventry Partnership Joint Strategic Needs Assessment Workshop. Coventry, England, June 2010